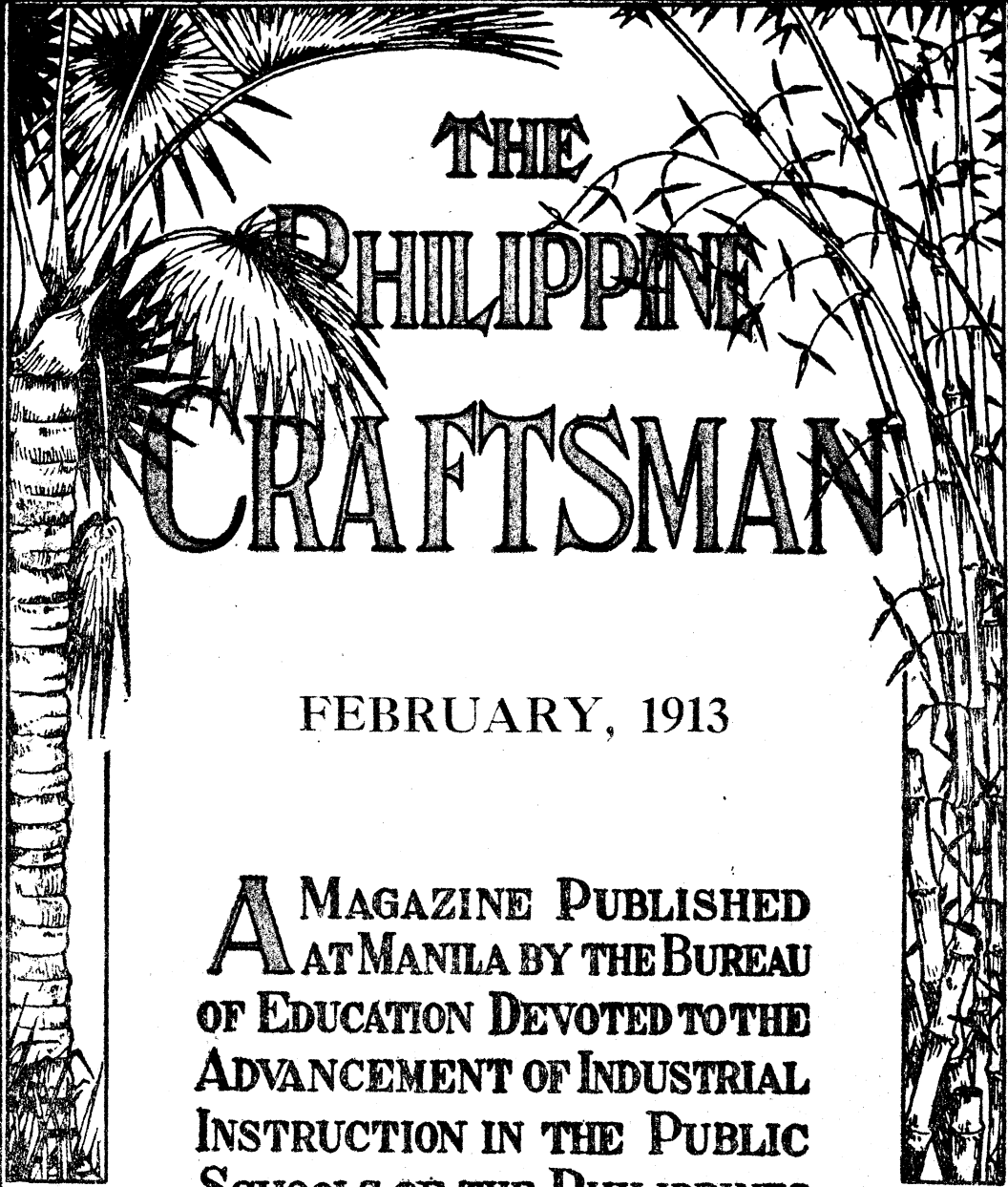




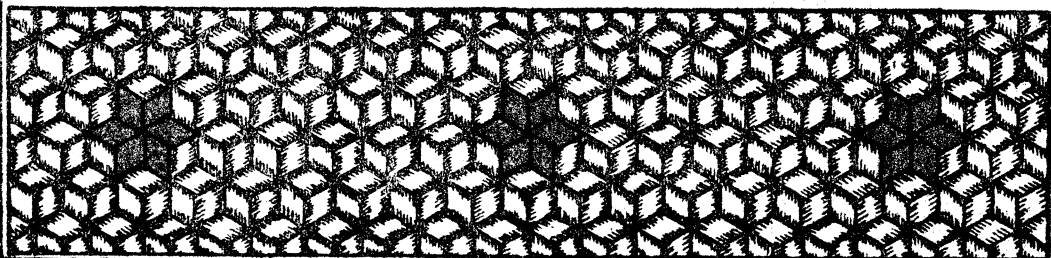
THE PHILIPPINE CRAFTSMAN

FEBRUARY, 1913

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VOL. I

NO. 8



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The Philippine Craftsman

VOL. I

MANILA, FEBRUARY, 1913

No. 8

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¶ Let the soldier be abroad if he will,
he can do nothing in this age. ¶ There
is another personage—a personage less
imposing in the eyes of some, perhaps
insignificant. ¶ The schoolmaster is
abroad, and I trust to him, armed with
his primer, against the soldier in full
military array.

—Lord Brougham.

The Philippine Craftsman

VOL. 1

FEBRUARY, 1913.

No. 8

SOME EMBROIDERY STITCHES AND THEIR USES.

By JOHN F. MINIER and R. B. ROBINSON.

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THE following article on embroidery stitches has been prepared with the idea of assisting embroidery workers to a clearer understanding of some of the fundamental stitches used in embroidery work and to explain the usual manner in which they are made so that they may be mastered without difficulty. This article presupposes a knowledge of the ordinary plain sewing stitches on the part of the worker, and for this reason no explanation is given as to the manner of making them. It also presupposes a knowledge of the ordinary fabrics and thread in common use in the Philippines, for it is of vital importance to have all work done with the proper kinds of materials and implements. By no means is this an exhaustive article on the subject of embroidery stitches. Different phases of this work will be taken up from time to time and discussed in detail.

It is not necessary for the beginner to learn to apply all of the stitches described before doing practical work. It is a good plan to obtain a thorough understanding and mastery of a few stitches before going on to others. By carefully selecting the pattern in accordance with the stitches already learned, the beginner can do acceptable work from the very first.

First-class work done with cheap materials is not advisable whether the work is intended for sale or for the personal use of the worker. Close attention should be given to the selection and the grading of the designs used, in order that they may be in accordance with the ability and training of the needleworker. Great care should be taken in comparing the thread with the texture of the cloth at hand and the character of the design to be reproduced. Too often fine embroidery work has been ruined by the use of inappropriate needles, inartistic designs, or a faulty selection of cloth.

The first thing to be observed in making most embroidery designs is the proper framing of the material, as the funda-

mental principle of the art of embroidery lies in the condition of the ground-work upon which the design is to be imposed.¹ The embroiderer must rely on a tight surface on which to place the stitches and not on the possibility of being able to overcome the faults of drawing and looping by the use of a hot iron after the work is finished.

The usual way of obtaining the required surface is to stretch the cloth by means of a bar frame. Wooden hoops are also serviceable. If a hoop is used, however, it should be held by clamps so that both hands may be free to manipulate the needle and thread.

Too often the worker does not give sufficient attention to the drawing of designs. The production of good embroidery is

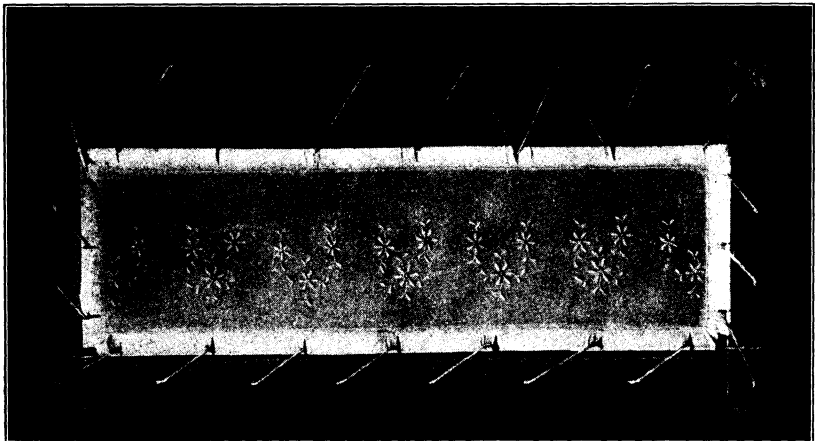


PLATE I. The proper method of framing embroidery.

a hopeless task if the work, no matter how good it may be, is done on a faulty design. An embroidery design which is intended to suggest the natural does not do so merely because it is an actual copy, but because it brings out some of the little characteristics by which the original is known. An embroidery design should give evidence in itself of its origin.

The placing of the design on the material is also a matter of importance, especially in the making of shirt waists. Very often the designs for the cuffs and collars are so placed that in cutting out the waist according to the pattern it is necessary to add additional cloth to prevent cutting into the designs. This

¹ All of the embroideries illustrated in this article were made in the School of Household Industries, Manila.

can easily be avoided by cutting off a strip 6 inches wide from the end of the cloth (assuming that the cloth is 1 yard wide). This gives a strip of cloth 6 inches wide and 36 inches long. In the center of the first 18 inches is placed the design for the collar, and in the remaining 18 inches the design for the two cuffs, so that each will be in the center of the two 9-inch spaces.

In placing the waist design it should be remembered that the end of the cloth is always fastened to the top of the embroidery frame and that the highest point of the design should be placed 5 inches from the end of the cloth. It should also be in the exact center of the frame from left to right.

Among many embroidery workers the tendency toward the complex in design and execution is a serious fault. The design should be simple, and in its execution judgment should be exercised as to the kind of stitches to be used. Frequently an article which contains splendid examples of the various embroidery stitches is itself a failure as an example of artistic work. The value of an embroidered article is sometimes ruined by placing an elaborate design on a small article or by executing a design placed on sheer cloth with coarse thread.

High-class embroidery is always in demand and, while it is true that certain stitches are at times more popular than others, yet this is but a transitory decree of fashion which does not in any way restrict the sale of high-class, artistic embroidery. commonplace embroidery is ever subject to the whims of fashion both as to the designs employed and the stitches used. For this reason the work done by the ordinary embroidery workers should be in keeping with the popular demand.

WASHING EMBROIDERY.

In preparing embroidery for sale great care should be exercised in the matter of washing, pressing, and folding it. When small embroidery articles are to be washed they are first allowed to soak in cold water until all stains caused by perspiration disappear, after which they are washed well with soapsuds and rinsed thoroughly in clean water. When the soap has been entirely washed out they are again put in thick soapsuds for six hours, during which time they are exposed to the sun and then rinsed in clear water. The articles are now placed in water mixed with bluing and alum. After remaining a short time they should be wrung out and ironed on the wrong side until dry.

Large articles are washed in the same manner as small ones, except that the former are kept in a frame during the washing process and until they are dry, after which they may be ironed on the wrong side.

Piña² embroidery is washed with clear water while it is still in the frame, after which it is rubbed well with soap and then allowed to stand in the hot sunlight for one-half hour. This process is repeated until the article is clean. Clean water is poured over the article until the soap is entirely removed. The article is again placed in the sun until dry, after which it is removed from the frame and ironed on the wrong side. If the piña is old it should be placed in fermented rice water and allowed to soak for twelve hours. It is then cleaned in the manner described above.

All classes of embroidery, when ironed, should be laid with wrong side up on a soft blanket or pad and ironed with a hot iron. Care should be taken to have the blanket or pad on which the ironing is done sufficiently thick and soft to avoid giving a flat crushed appearance to the design.

Before an article can be classed as entirely finished it should be neatly folded and pressed so as to lie flat with the full design exposed. A piece of very light-brown paper should be placed under the top fold so as to bring out the details of the embroidery stitches. Embroidered articles have a tendency to become yellow if exposed to the light for a long time. This may be avoided if they are wrapped in dark-blue paper.

OUTLINE OR STEM STITCH.

The outline or stem stitch is usually the first to be taken up by beginners in embroidery. It is used primarily in covering outlines but may be employed in nearly all forms of embroidery. In embroidery work the threads should never be knotted. Instead, two or three running stitches should be taken in the opposite direction from which the work will continue. These stitches being immediately worked over, the thread is thus secured. The outline stitch is worked from left to right in the manner illustrated in Plate II, figure 1. On a straight or slightly curved line all stitches must be uniform in length. In rounding sharp curves smaller stitches are required, the length of the stitch depending upon the kind of material used. Parallel

² A fine fabric woven from the fiber obtained from the pineapple plant. It is delicate, soft, and transparent, with a tinge of pale yellow.

rows of about nine stitches laid closely together make an excellent surface-covering stitch for one who is not proficient in Kensington stitch.³

CHAIN STITCH.

The chain stitch (see Plate II, fig. 2) is used in place of the stem stitch for small subjects which are merely outlined, or for outlining bigger ones filled in with flat stitches. It is worked toward the embroiderer with the threads secured by running stitches at the end of the stamped line. The needle is then brought to the right side of the material, which is held over the finger. The thread is held down with the left thumb and the

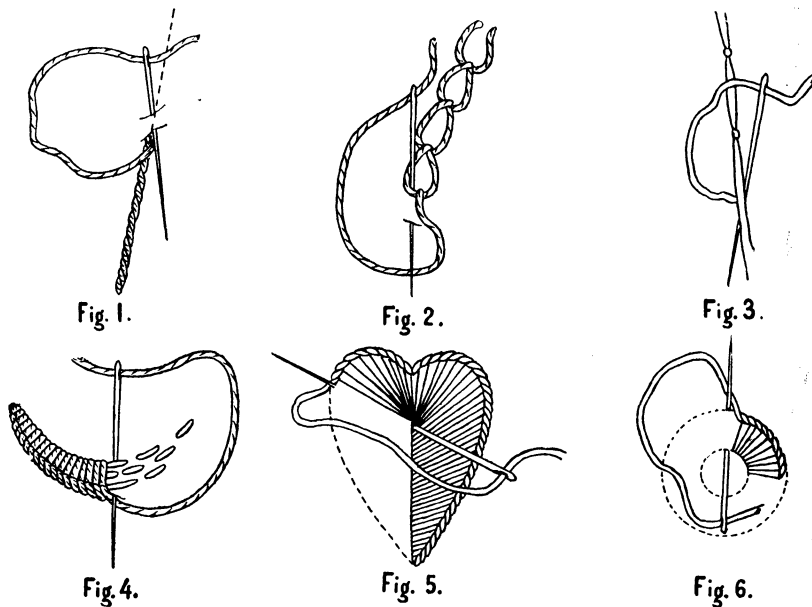


Plate II.

needle inserted in the same hole where the stitch began. Thus the thumb forms the thread into a loop. A stitch is then taken downward and the needle brought up on the stamped line inside of the loop, and drawn through. Each successive stitch is made in the same manner, the needle being inserted inside the last-made link of the stitch. In order to do neat work stitches of uniform length must be made.

³ Credit is given to the Butterick Publishing Company for the use of some of the information taken from Volume II, No. 3, of the Butterick Designs.

COUCH OUTLINE.

The couch outline (see Plate II, fig. 3) is made with two sets of thread, the one being laid or couched on the surface of the fabric by means of small stitches made over it with a second thread. An unbroken line is thus obtained and a cord or group



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.

Plate III. Methods of embroidering scallops.

of threads used which would not be practical for through-and-through stitching. The end of the cord is attached to the wrong side of the material by pushing it through with a stiletto or other pointed instrument. This end is held tight with the left hand and fastened with single stitches which span it at regular intervals throughout its entire length. These stitches must be close together so as to prevent the cord from springing out of position. On a curve they must be closer than when in a straight line. This is a very useful and effective embroidery stitch, and is frequently used in putting small braids on dresses.

BUTTONHOLE.

The buttonhole stitch (see Plate II, fig. 4) is usually employed in working scallops. It is worked from left to right

along the surface of the material, which should not be cut away until the work is completed and laundered. When making scallops on doilies care should be taken that they are not too near the edge of the material. Sometimes no padding is used in making the scallops. However, in most cases, its use is advisable,

as the raised work is more durable and effective than that which is not padded. The margins of the scallops must be closely run before they are worked. A framework is padded in by the use of several rows of running stitches, their number and length depending upon the size of the scallop. The work is held so that the stitches are always upright with the purl edge of the buttonholes toward the worker. The thread is brought to the right side of the material on the inside edge of the stamped line. With the material over the finger and the thread held down with the left thumb, the needle is inserted close to the starting point and the downward stitch taken to the stamped line of the scalloped base. The needle is then drawn through the loop formed by holding the thread. The work is continued by always holding the thread and continuing to make the downward stitches and laying them closely side by side. Their direction changes slightly, owing to the curved line of the scallop.

WALLACHIAN STITCH.

The Wallachian stitch, as illustrated by Plate II, figure 5, is only another form of the buttonhole stitch. The stitches are placed with the purl edge on the outline, the stitch being finished in a line

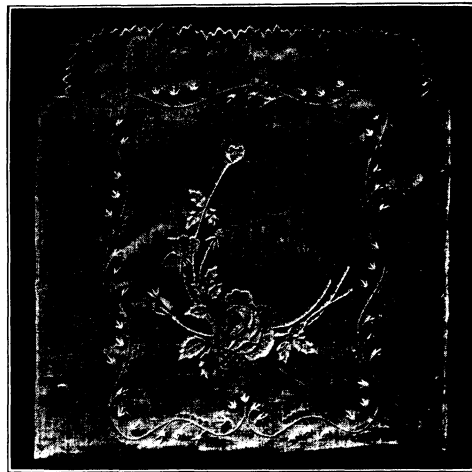


PLATE IV. An embroidered handbag.

along the central vein through the figure. As illustrated, the stitches are slightly slanted; however, many people prefer to make them upright at right angles to the line of direction in which the person is working. Work is begun at the lower part of the figure and proceeds toward the left.

This stitch is used especially in embroidering large floral designs. With it one can cover a large space in a very short time.

WALLACHIAN EYELET.

The Wallachian eyelet (see Plate II, fig. 6) and the method of executing it are almost identical with that of the buttonhole. All stitches are evenly spaced and combined, and point to a common center. If an open hole is desired the inner circle

is first run and the material punched with a stiletto, after which the buttonholing is made, the stitch being taken through the hole made by the stiletto. This stitch is very effective and is quickly made. It shows up very well on coarse materials.

SINGLE LACE OR NET STITCH.

The single-lace or net stitch is only one of the many stitches that may be developed from ordinary buttonholing. It is made by laying several rows of loose buttonhole stitches side by side. The first row is made of loose, even stitches, the length depending upon the size of the design and fineness of thread used. The first stitch of the second row is placed midway between

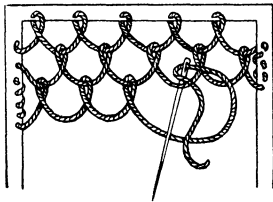


Fig. 1.

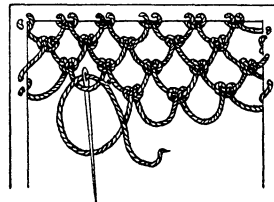


Fig. 2.

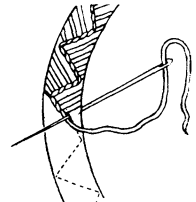


Fig. 3.

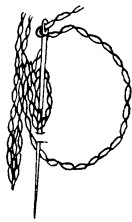


Fig. 4.



Fig. 5 a.



Fig. 5 b.

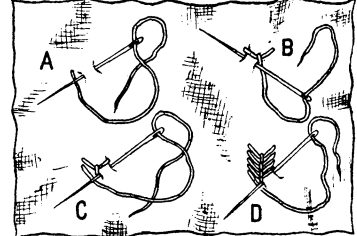


Fig. 6.

Plate V.

those of the line above, the needle being put over the base of the stitches of the row above. Plate V, figure 1, plainly illustrates the manner in which the succeeding rows of stitches are made.

If the needle is put over this base but on a line with it and not pulled down, the result will be bricking. The stitch is simple, easily made, and serves for filling in large surfaces.

DOUBLE LACE OR NET STITCH.

The double-lace stitch is made in the same manner as the single-lace stitch, except that in each loop two buttonhole stitches instead of one are made. These stitches should be laid close

together. It is always better to round the loop a little less than is ordinarily done in the single stitch. (See Plate V, fig. 2.)

TRIANGULAR BUTTONHOLING.

Triangular buttonholing is simple and is very easily accomplished, especially within definite parallel boundary lines as illustrated in Plate V, figure 3, or in those of the scallop formation. The purl edge of the buttonhole stitches must always be in a straight line and the first stitch of the triangle be close to and

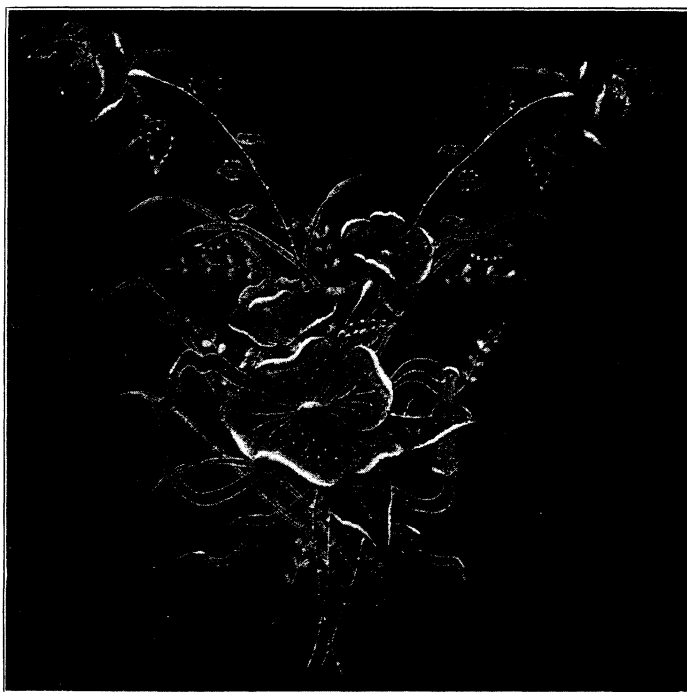


PLATE VI. An embroidered waist front, rose design.

parallel with the purling of the completed triangle above it. Care must be taken to make the stitches uniform throughout. Conventional ribbons and many other similar designs may be embroidered with this stitch. In beginning a small area, as the end of scallop form, the single-feather stitch should be used with triangle formation, starting as soon as the space permits.

KENSINGTON STITCH.

The Kensington stitch (see Plate V, fig. 4) has the appearance of massed long and short stitches. It is easily worked

into a long and short margining of a leaf or petal. The beginning is made at the top of the figure and worked toward the button with a long stitch on the right side of the cloth and a short stitch on the wrong side. This is simply a form of back stitching. Three or four stitches are worked downward and then the same number up again. This is repeated until the desired space has been filled. All stitches must be closely wedged together so as to cover entirely the underlying material. No attempt should be made to use the stitch when the material is not tightly stretched in a hoop or frame. The direction of the stitches is of the utmost importance. They must always conform to the outline and undulations of the form attained. Where the change is constant and the form subtle, long sketching stitches may be first laid to guide after efforts. They may afterwards be ripped out and worked over. Shading of petals should be as natural as possible. The curled or turned-up edges of the petals are padded. The embroiderer should always take into consideration the relation of these curled edges to the petal when laying the stitches, remembering that they are so placed that if the curled part were flattened out to its original position, the stitches would point toward the base of the petal.

DOUBLE CORAL STITCH.

The double coral or feather stitch is nothing more than an elaboration of the simple feather stitch. (See Plate V, fig. 5*a*.) It is an essential of both plain sewing and embroidery and is one that requires a great deal of practice. The stitching which is merely buttonholing is done toward the worker. These stitches are arranged apart, a series being made first on one side and then on the other. Simple feather stitch readily covers a straight stamped line, but the fancy one (see Plate V, fig. 5*b*) should have the lines specially stamped. In doing this work the needle is started at the top, the thread being drawn through from the wrong side and held with the thumb. The needle, slanted to the left, is inserted at the right of the starting point and drawn through the cloth and over the thread held by the thumb. Care must be taken not to draw the stitches too tight. The second buttonhole stitch is made in the same manner so that the purl edge of the two stitches will be in a straight line. The thread is now thrown toward the left, held down with the thumb, and a slanting stitch made from left to right. The thread is drawn through the loop in the same manner as the first stitch and the operation repeated, merely alternating from right to

left and from left to right. Other effects may be obtained by varying the slanting and the spacing of the stitches. However, uniformity in regard to length of stitches must be maintained



PLATE VII. A detail of Plate VI showing uses of the various stitches.

throughout. The number of buttonhole stitches may be increased on each side of the line if a wider stitch is desired.

VAN DYKE, V, OR BALKAN STITCH.

Van Dyke, V, or Balkan stitch, as it is variously called, is an excellent one to use for leaf and petal forms in work not of naturalistic design. It consists of a series of V forms set closely beside each other. These may be graduated in size to conform to an outline. Work is begun near the top. The needle is inserted from the underside of the left outline and drawn through, and then inserted as shown in (a) Plate V, figure 6. The thread is held the same as in buttonholing and feather stitching. The method is exactly the same as in the first stitch

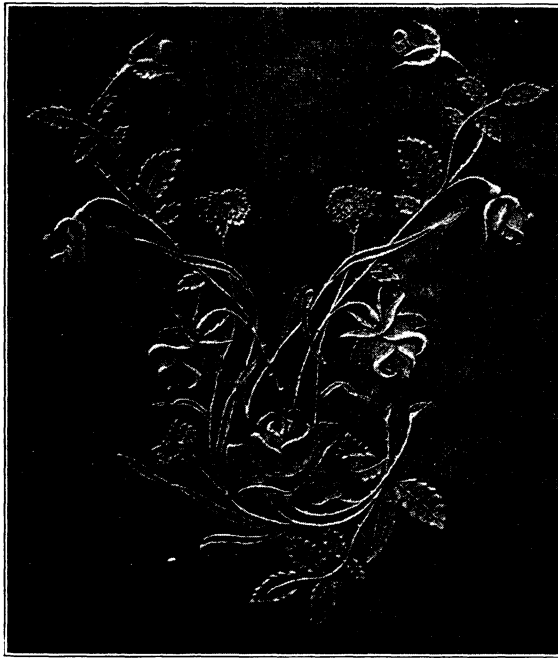


PLATE VIII. An embroidered waist front.

of feather stitch, but in Van Dyke the stitch is drawn into a V shape and secured at the base with a single seed stitch. Succeeding V stitches are placed with seed stitches direct in line, and if there is no central line in the form to guide, the worker should draw one so as to facilitate her efforts. Steps (a), (b), (c), and (d) show the method of making these stitches.

The Van Dyke stitch may be used with equally good effect in both floral and conventional designs. Two or three rows of them may be worked side by side if space permits.

EYELET STITCH.

The eyelet stitch is made by whipping over and over a number of running stitches which border an eyelet or hole to be embroidered. These running stitches should be small. In large eyelets the solid outline is usually made by running around twice as shown in Plate X, figure 1. When embroidering small eye-

lets many workers usually make an outline and then punch through the material with a stiletto, working it around until the cloth is pushed back to the run line. In case of a large eyelet the center is quartered and each of the four points halved and then folded back. Oval eyelets are cut lengthwise and across through the widest portion. They are then stitched over and over the running line and through the hole. The stitches should be made even and pulled tight enough to keep the material rolled inside of the whipping. When the eyelet is finished the stiletto should be inserted from the underside of the material, and twisted around several times to raise the eyelet and make it round.

SATIN STITCH.

The satin stitch is very well known and is used throughout the Philippines in making the solid stitches of French embroidery. It consists of nothing more than stitches closely laid side by side spanning the entire width of the form to be embroidered. When well executed it gives a smooth surface; hence its name, satin stitch. It is never suited to unbroken surfaces wider than the feasible length of a single stitch, although theoretically it may extend to any length. It is useful for embroidering petals, leaves, stems, monograms, etc. The stitches may be

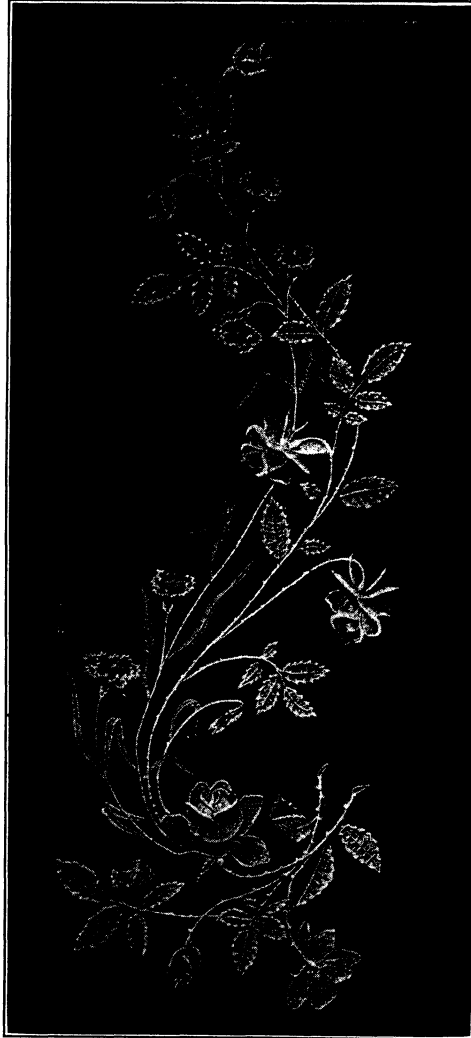


Plate IX. An embroidered panel.

either straight or slanting, depending upon the design embroidered. The stitches are made either toward or away from the worker, but the needle should be brought up on the left-hand edge and inserted on the right-hand edge of the design. Many workers make the entire stitch by inserting the needle on the right-hand side of the design and bringing it out at the left as shown in the figure. However, many of the expert Filipino workers draw the needle and the thread through the right-hand edge of the border before inserting the needle in the left edge. No attempt should be made to do this work unless the material is stretched tightly in a hoop or a frame. Embroidering a curved form necessitates the crowding of stitches along the smaller side of the figure; to maintain the same relative slanting throughout the work requires considerable practice and attention. When embroidering leaves, the stitches are usually laid obliquely to the midrib of the leaf. The raised satin stitch is worked exactly as shown in Plate X, figure 2. The Chinese employ the satin stitch to a great extent, but in most cases they use no padding. Yet, in a great deal of high-grade work padding is employed to good advantage. An outline is first run over the entire surface of the form with flat, even, running stitches. Over these is placed the satin stitch. It should always be remembered that the appearance of the work will depend to a great extent upon the uniformity of the padding stitches. Many people lay the padding stitches in a loose and flimsy manner. When this is done it is difficult to obtain even work. The relief may be raised to any height by successive layers of padding, or by going over it with chain stitches or running stitches. However, it is not best to use too much padding.

The padding is laid in the opposite direction to the satin stitch to prevent the latter from sinking into the former. Some people make the mistake of permitting much padding to appear on the underside of the embroidered surface. This should be avoided, for it makes a rough and bulky finish. In a veined leaf the padding is laid in two sections, the outlines of each being run separately. Each section is covered with the satin stitch, the division between the sections forming the vein. Often in the case of very wide sections they may be broken and worked out in two parts as when making petals.

THE TURKISH OR CAT STITCH.

The Turkish or cat stitch (see Plate X, fig. 3) is easily made by anyone who knows the first principles of sewing.

When this stitch is employed on the wrong side of the material it is known as shadow work. Fine or close meshes may be made, depending upon the kind of material used.

For fine lawn, pearline, or batiste this embroidery is very effective when worked on the wrong side of the material and allowed to show through on the right side.

POST OR BULLION STITCH.

The post or bullion stitch is not difficult, nevertheless it is most ornate and beautiful. It is usually used in embroidering designs like wheat, barley, and for small patterns composed of

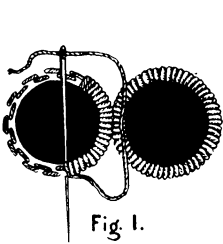


Fig. 1.

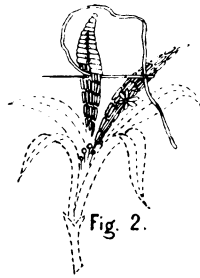


Fig. 2.

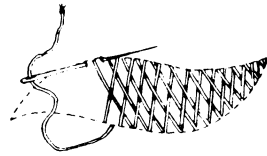


Fig. 3.

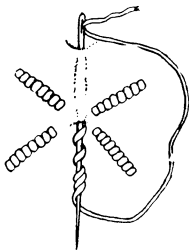


Fig. 4.

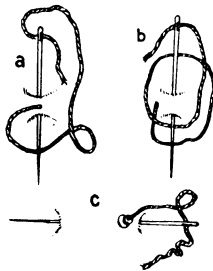


Fig. 5.

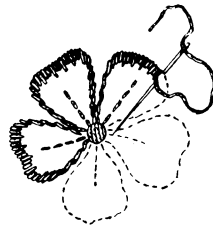


Fig. 6.

Plate X.

little flowers and leaves as well as for the star formation illustrated in Plate X, figure 4. The needle is inserted in the material as shown in the figure. Before it is pulled through, the thread is wound around a sufficient number of times to cover the length of stitch taken. Care should be taken not to wind the thread too tight. The needle is now pulled through the coil while the thread is held with the left thumb. When the coil has been properly placed it is necessary to stitch back again on the wrong side close to the starting point. If a short stitch is taken up on the needle and the same number of coils maintained, the result is called looped bullion stitch. After one or two

stitches are made the worker can easily determine whether it is necessary to add or take away from the coils on the needle. If there are too many coils the stitch kinks. If there are not enough the stitch is rough and uneven.

FRENCH KNOT.

The French knot is a very useful embroidery stitch and is used for various lines of work. It is especially useful for embroidering the tops of pistils in floral designs. There are almost as

many methods of making the stitch as there are uses for it. Many workers usually make the mistake by not having the knots lie close to the fabric. A close-lying knot is obtained if the stitch is made in the manner illustrated in Plate X, figure 4. These knots are very easily made if an embroidery hoop or frame is used. Only a few threads should be upon the needle when it is inserted, according to the first figure. The thread is held down with the left thumb as in button-holing before the second stitch is made. It is passed around under the

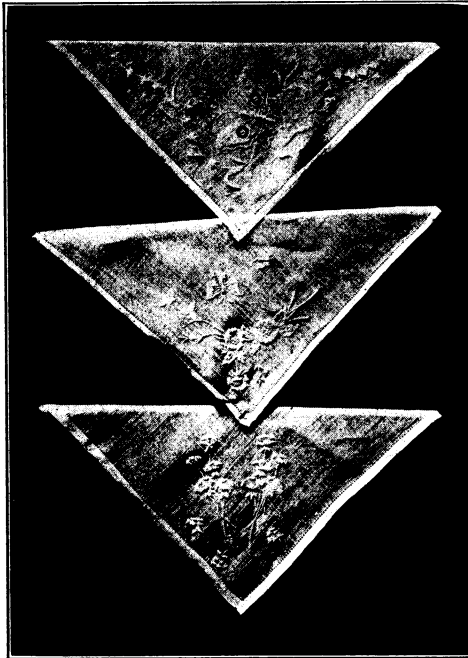


PLATE XI. Some good handkerchief designs.

needle point, always being held with the left thumb. While the thread is still held with the thumb the needle is pulled through and a coil is formed. When the needle is inserted again close to this knot it is completed.

LONG AND SHORT STITCH.

The long and short stitch is used to a great extent in shading the edges of leaves, petals, etc. (See Plate X, fig. 6.) It is a compromise between outlining and solid embroidery. It demands constant changes in the length of stitches and the way in which they are laid. Considerable practice is necessary be-

fore good results can be obtained. Work should be begun at the base of a leaf or petal and continued up the side in successive over and over stitches. The first few stitches are irregular on the inner edge and are clear cut on the outer. This even edge must always be maintained on the outside margin. However, the long and short stitch presents a great irregularity on the inside.

A great number of workers sometimes begin at the outer edge of a petal and work toward the base. This method is just as good as the one stated above. The length of the stitch is regulated by the size of the thread employed. Padding is frequently used in embroidering the heavy edges of petals. During recent months this stitch has become very popular in embroidering flowers, and to a great extent has taken the place of solid embroidery for this work.

WOVEN BARS.

Woven bars are stitches woven between two or more threads and are easily made. The end of the thread is fastened to one edge of the material and passed to the next edge and back to the original starting place. This makes two lines which correspond to the warp used in a loom. The weaving is done with a needle as illustrated in Plate XIII, figure 1.

BUTTONHOLE BARS.

Buttonhole bars are used in making lace and Roman cut work. The foundation of the bar is made in the same manner as the woven bar. A row of buttonhole stitches is worked over the bar as shown in Plate XIII, figure 2. When making this stitch

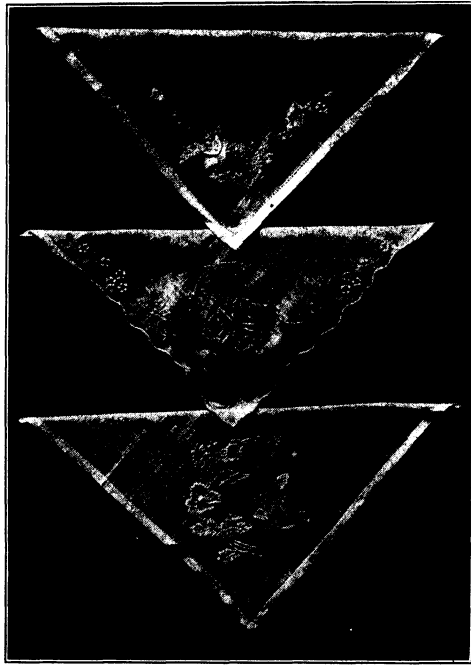


PLATE XII. Some good handkerchief designs.

the needle is passed under the bar from the top and the thread placed under the needle. Care should be taken to pull the stitches tight. The operation is repeated until the bar is entirely covered.

TWISTED BARS.

Twisted bars are easily and quickly made and used to a great extent in lace work to fill in an open space and hold together two edges as in the plain Russian stitch. They are also frequently used to fill in long eyelets in waists, etc.

The thread is fastened to the braid and taken over from one

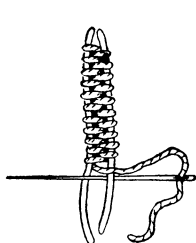


Fig. 1.

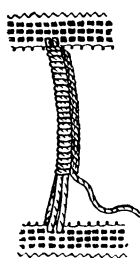


Fig. 2.

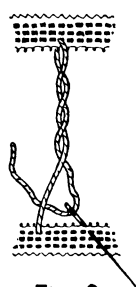


Fig. 3.

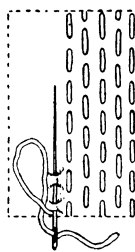


Fig. 4.

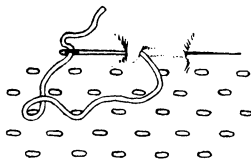


Fig. 5.

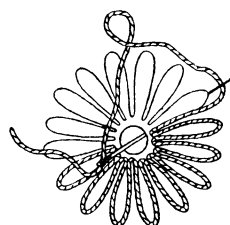


Fig. 6.

Plate XIII.

side to the other. The needle is pointed downward from above and the first thread overcast as often as is necessary to give the two threads the appearance of a twisted cord. If the overcasting stitches are not close enough the bars will appear loose and untidy, thus spoiling the general effect of the work. When the first bar is finished the overcasting stitches are continued beyond the edge of the braid to the place where the next bar begins.

Sometimes in making these bars three threads instead of two are carried across the empty space and overcast, though not so closely as the bars described above. Plate XIII, figure 3, illustrates the manner in which these stitches are made.

DARNING STITCH.

The darning stitch (See Plate XIII, fig. 4) is very simple and is familiar to every needlewoman. It is a running stitch made in rows, the stitches of the different rows alternating with each other. Care must be taken that all stitches are of uniform length and are evenly laid. In ordinary white material the stitch should be taken over a certain number of threads. In this way it is not difficult to obtain uniformity throughout. This stitch is usually used in embroidering designs on ladies' gowns.

SEEDING.

The seed stitch is one of the most useful ones employed in embroidery. It is nothing more or less than a tiny back stitch done at regular intervals in rows, each stitch being placed to alternate with the stitches in the previous row as shown in Plate XIII, figure 5. The regularity and evenness of the work constitutes its chief beauty. It is very effective when combined with the long and short stitch in making leaves and flowers. It is frequently used to a great advantage in combination with the satin stitch, one-half of the leaf or ribbon being done in satin stitch and the other half, in seeding. Letters or monograms are frequently made with the background entirely filled with seeding and the outline covered with a fine, delicate satin or whipping stitch. Very good effects may be obtained by working the seed stitches on top of satin stitches. This is frequently done in making initials and the stems of flowers.

LAZY-DAISY STITCH.

The lazy-daisy stitch is only a different application of the buttonhole stitch. Each petal is made by a single buttonhole stitch, which is then held in place by a couching stitch taken over it at the point. The thread is brought up to the right side of the material at the center of the daisy petal. In the buttonhole stitch the length of the entire petal is taken. A short stitch catches the buttonhole stitch down to the material at the point of the petal as shown in Plate XIII, figure 6. The stitch is a very effective one, usually well known to good embroiderers, and requires but little practice to make it well.

FRENCH STEM STITCH.

The French stem stitch is used where a heavier appearance than ordinary outline is desired. A foundation is necessary for this stitch. This foundation is frequently made with the outline stitch. (See Plate XVIII, fig. 1.) However, the darning or

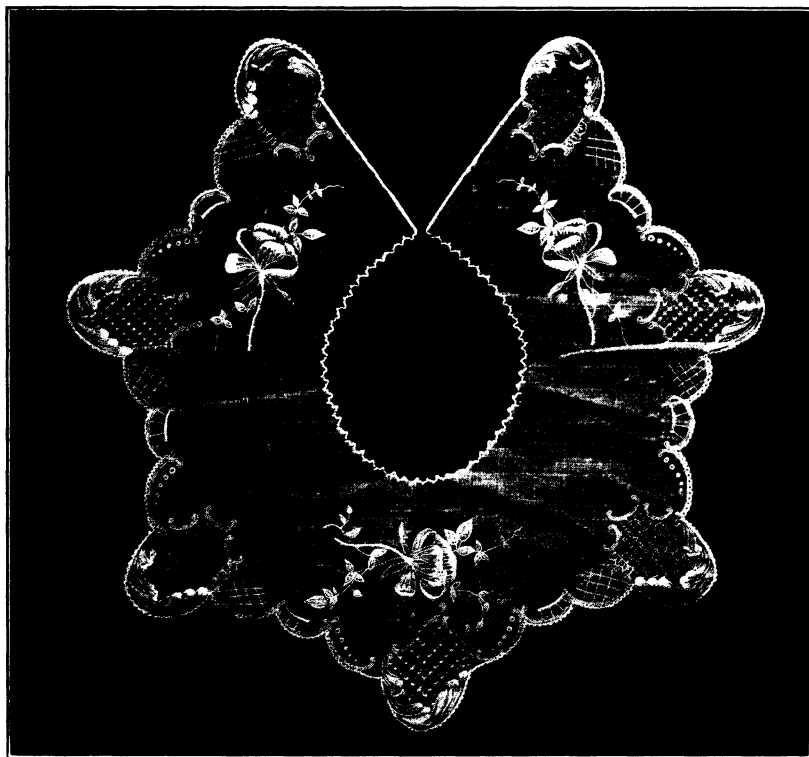


PLATE XIV. An embroidered piña collar.

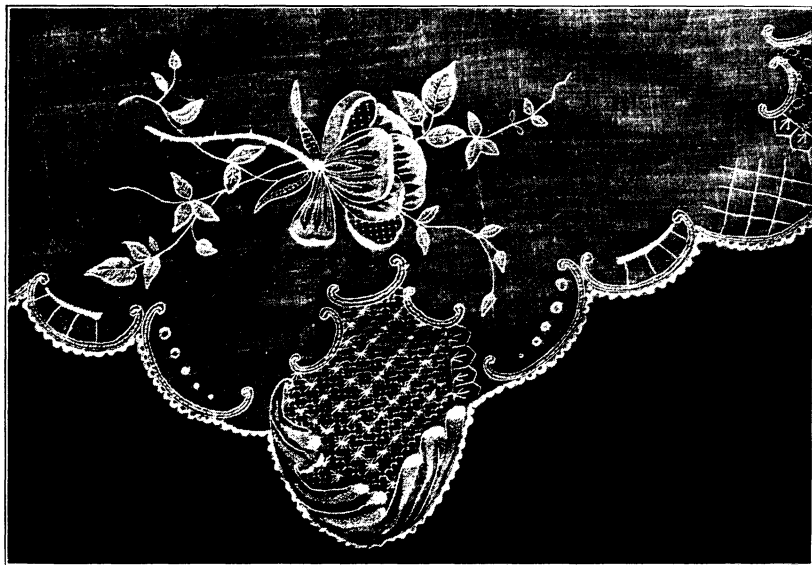


PLATE XV. A detail of Plate XIV.



PLATE XVI. A detail of Plate XIV.

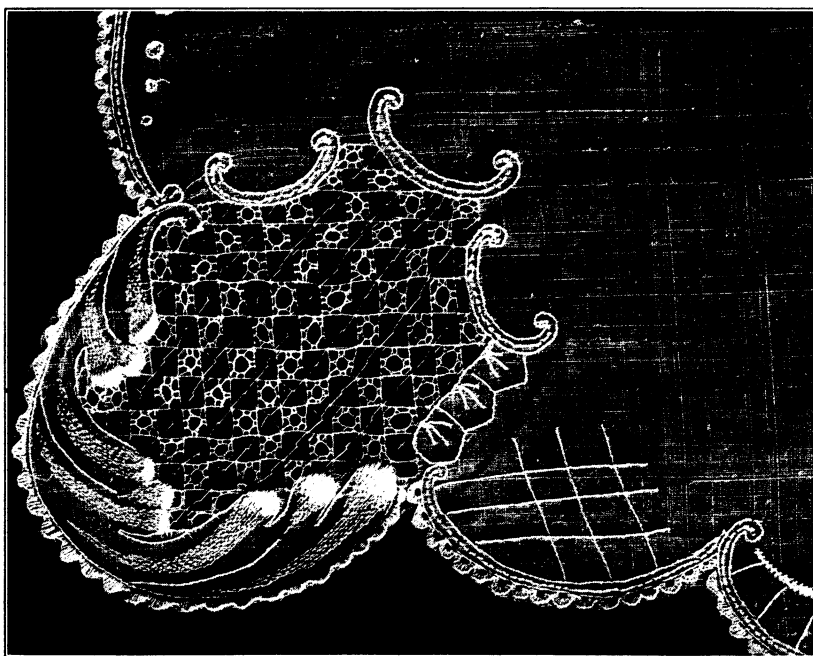


PLATE XVII. A detail of Plate XIV.

filling-in stitch is sometimes used. When the line is covered with either of the above-mentioned stitches, it is worked over with satin stitches and laid close together. It is whipped over the outlining and not caught in the material at all. The needle simply passes under the outline thread, covering it entirely. The French stem stitch is used to a great extent for white embroidery especially for lingerie, initials, and monograms. Often the outline stitch alone is used in making stems. However, a better appearance is made if this outline stitch is covered with the French stem stitch.

PLAIN RUSSIAN STITCH OR FAGOTING.

Like the twisted bars, the plain Russian stitch is used to a great extent in connecting braids and filling in spaces. There are a great number of these stitches. Some are of a very elementary nature, while others are difficult and demand great skill and patience in their execution. However, only three of the

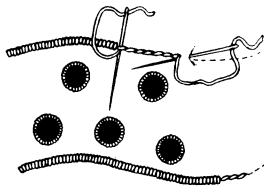


Fig. 1

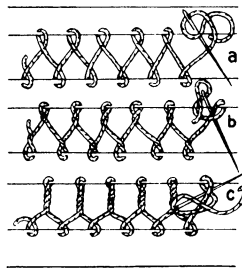


Fig. 2

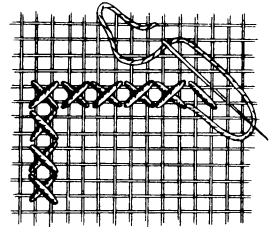


Fig. 3.

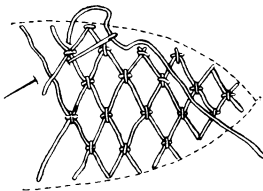


Fig. 4.

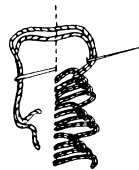


Fig. 5.

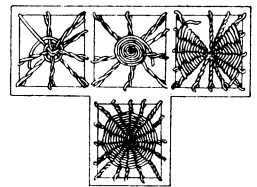


Fig. 6.

Plate XVIII.

easiest ones are illustrated here. When making this stitch the needle is stuck downwards under the opposite edge, care being taken to keep the thread in front of the needle. The stitches must always be the same distance apart, or else the work will appear uneven.

In the execution of the twisted Russian stitch the needle, instead of being passed behind the thread, is passed in front

and around it so that it comes out again under the thread, which is then twisted twice.

The lower part of the column stitch is the same as the plain Russian stitch described in Plate XVIII, figure 2a.

The only difference between this stitch and the Russian stitch is that the second thread is twisted three times around the first.

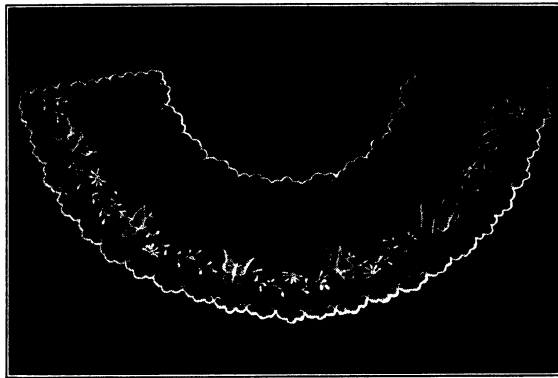


PLATE XIX. An embroidered piña candle shade.

CROSS STITCH.

Cross stitch (see Plate XVIII, fig. 3) is used to a great extent for decorating table covers, workbags, runners, aprons, and, in fact, any material that has an even weave. However, at times it is used on other materials but first a piece of coarse-weave material must be basted over the part to be cross-stitched

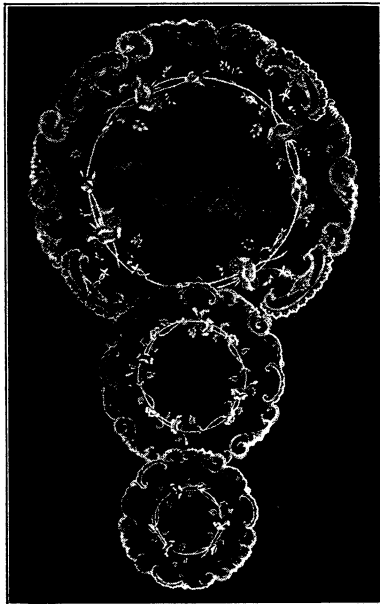


PLATE XX. Piña centerpiece and doilies.

and the design transferred to it. After the work is completed the threads of the basted part are pulled out, leaving only the cross-stitch work on the original material. A blunt long-eyed tapestry needle is most practical for this work. The size of the thread varies with the kind of material used. It should be heavy enough to fill the mesh of the background completely. Cross-stitch designs are frequently worked in canvas, soft wools, or silk, and when they are finished the entire back ground is filled in with this stitch in a contrasting shade, thus covering the whole surface with cross-stitch. While this stitch is not used to

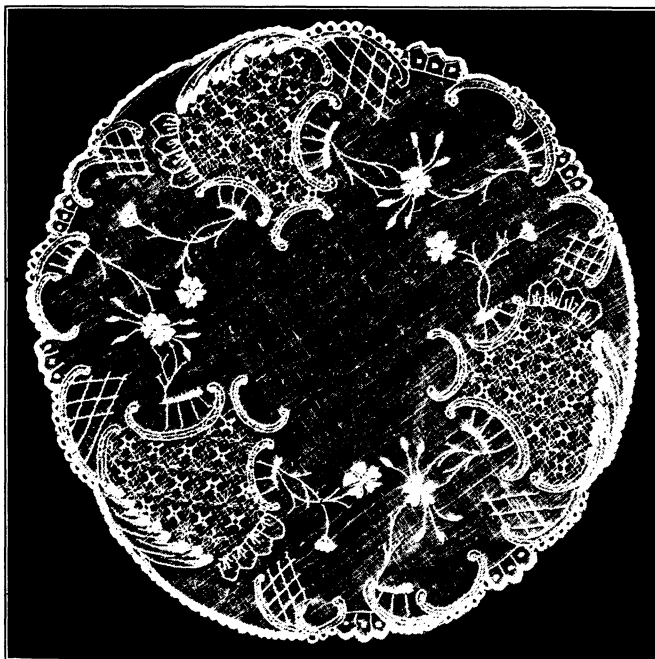


PLATE XXI. A piña doily.

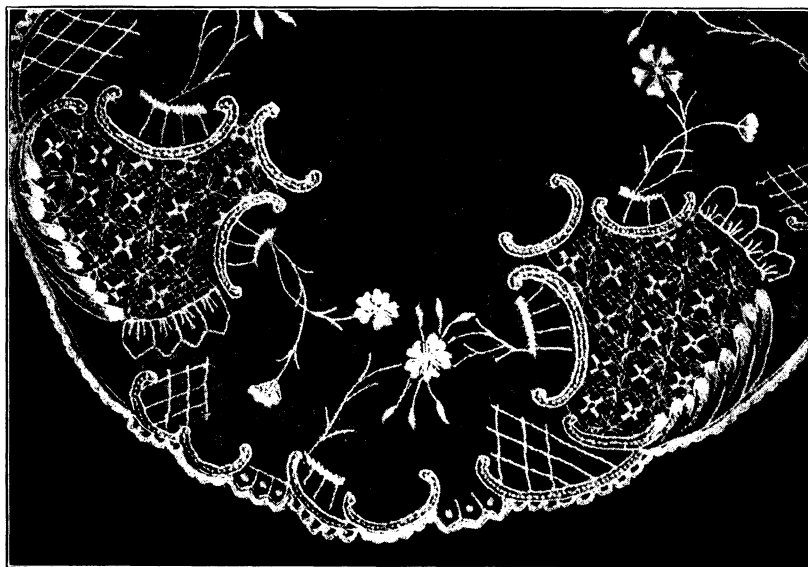


PLATE XXII. A detail of Plate XXI.

a great extent on articles made in the schools of the Philippines, it will be valuable for cuffs, collars, etc.

Several patterns for cross-stitch work are shown in the December issue of *THE PHILIPPINE CRAFTSMAN*.

DAMASK STITCH.

Damask stitch (see Plate XVIII, fig. 4) is used extensively for filling in large, open spaces. It is bold in character and similar to Mountmellick work. Work is begun at the end of a leaf or petal and the thread laid across the design on the slant or straight at even distances. After these threads are laid, an-

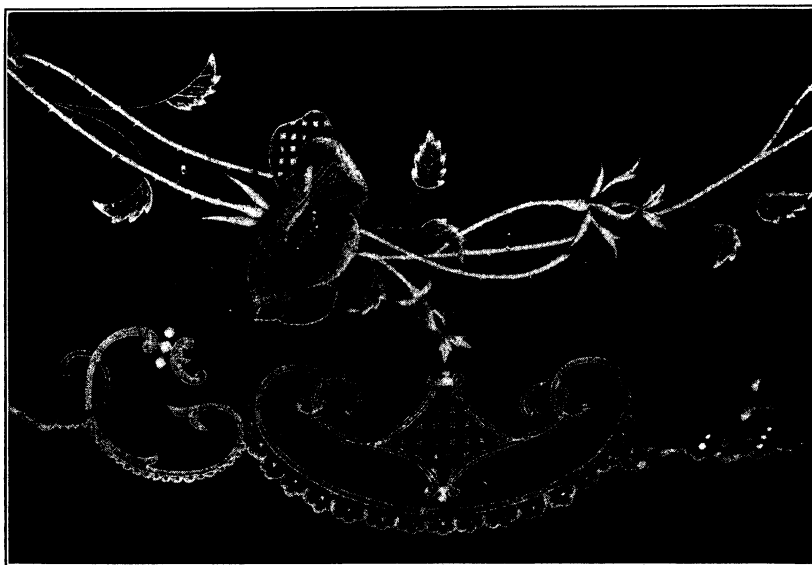


Plate XXIII. Detail showing the embroidered edge of a piña centerpiece.

other row is placed across them as shown in Plate XVIII, figure 4. Where the lines cross each other a small cross is made to fasten down the threads securely. These crosses are made wherever two lines intersect. It is not necessary to carry the thread across the space underneath preparatory to making a new line, but the needle is stuck in on the same side of the outline from which the thread is brought up. The edge of the design decorated with damask stitch should be worked with the outline or the couch stitch.

PYRAMID STITCH.

The pyramid stitch (see Plate XVIII, fig. 5) is another of the many applications of the buttonhole stitch. If made on a

straight or slightly curved edge small pyramids are formed. The size of the pyramids is a matter that the workers have to decide. However, it is never advisable to make the longest line more than 6 mm. long. Each succeeding line should be about 1 mm. shorter than the previous one. Four lines of buttonhole stitches are necessary for each pyramid. The first stitch is made like the regular buttonhole, the thread being kept under the needle to form the loop. The next stitches are made in the same way but a trifle shorter and placed about 1 mm. apart. After the four stitches have been made a new triangle or pyramid is begun. The first stitch of the pyramid is always the longest one.

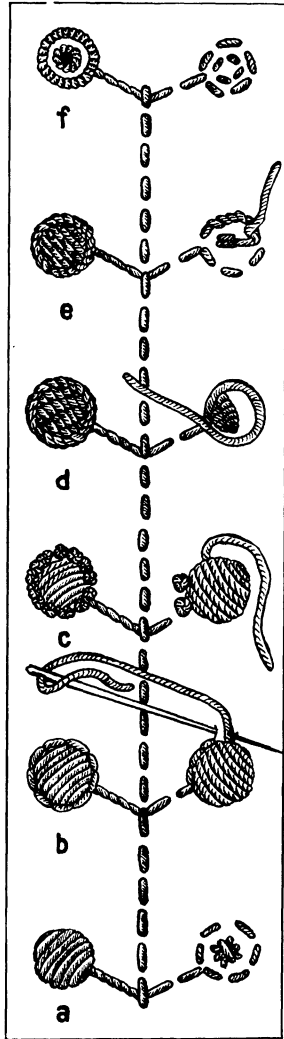


Plate XXIV. Six methods of embroidering dots.

WOVEN SPIDER OR WEB STITCH.

The woven spider or web stitch is used to fill in spaces, especially in drawn work. The foundation lines or webs may be made of twisted or plain bars. If they are twisted and uneven in number the weaving may be begun in the center and carried out in rows as shown in Plate XVIII, figure 6. A great number of designs may be obtained by using this form of stitch.

SIX WAYS OF MAKING DOTS.

Dots, when well made, are exceedingly effective in white embroidery, particularly if they are worked in a variety of stitches. Dot A (Plate XXIV) is worked in raised satin stitch; B, in raised satin stitch, framed in backstitch; C, in raised satin stitch, framed in French knot stitch; D is composed of several post stitches of different lengths, set in a frame of stem stitches; E is worked in backstitch outlined with overcast; and F consists

of a small eyelet hole which forms the center, framed with the overcasting stitches.⁴

INITIAL EMBROIDERY.

There are various forms of initial embroidery requiring the combination of various forms of stitches. However, only one form is taken up here. This kind of embroidery requires careful work and much practice is necessary to attain good results. The method for French embroidery letters is shown in the initial W. The outlines of all solid parts of a letter are first run and the other parts outlined. Good work can not be obtained unless considerable attention is given to padding. If this is poorly done the finished initial is rough and uneven. The satin stitch is used in working over the padding and outline portions by beginning at the top and working downward as indicated in Plate XXV, figures 1 and 2. The use of the seed stitch is also

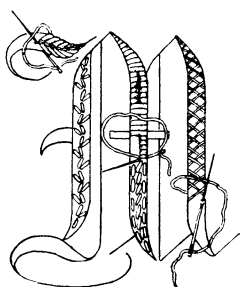


Fig. 1.

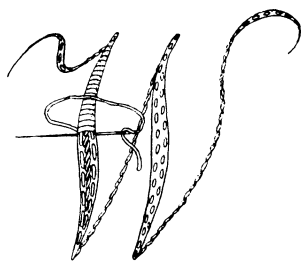


Fig. 2.

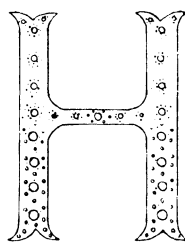


Fig. 3.

Plate XXV. Initial embroidery.

shown in this figure. These useful stitches are backstitches worked lengthwise on the letter. The stitching is done toward the worker with the forward stitch on the right side of the cloth and a long backward one on the wrong side. The stitches of successive rows are placed midway below and between those of the row above. The margins of portions filled with seed stitches are either worked in plain outline stitch or lined with a tiny line of satin stitches, whipped over a single thread. Seeding in initials is generally used in combination with satin stitch. Sometimes a whole letter will be brought out in this manner,

⁴ Some of the information relative to making dots and hemstitches has been taken from the *Encyclopedia of Needlework* published by the Modern Priscilla, Boston, Mass.

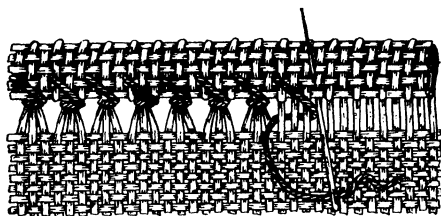


Fig. 1.

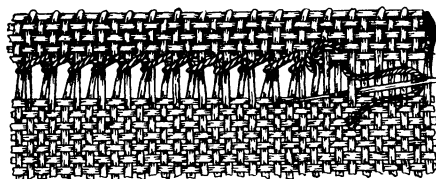


Fig. 2.

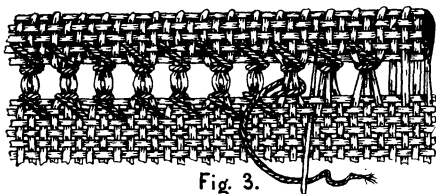


Fig. 3.

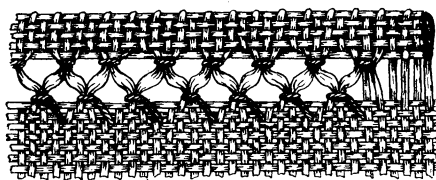


Fig. 4.

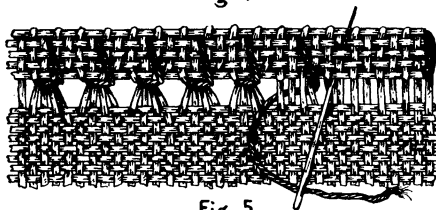


Fig. 5.

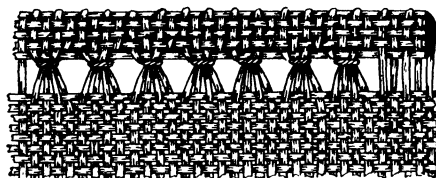


Fig. 6.

Plate XXVI. Some hemstitches.

with others done entirely in satin stitch, but more often both stitches are used in the same letter. In the letter H the uses of the various fancy stitches are shown. In its upper portion are tiny dots evenly spaced and surrounded with a circle of seeds. In the latter portion the dots are a trifle larger and seeding is laid in the usual manner. These letters must be outlined as in the case with the seeded portions. Oftentimes the Van Dyke stitch is found useful in embroidering letters. Its possibilities are illustrated in the upper left-hand part of the letter M. The plain feather stitch, compact or spaced, is useful and it is desirable when quick results are wanted. However, it is not often found on high-grade work. Catstitching is another familiar expedient. When making this stitch the needle points toward the worker in the tiny stitch taken first on the right and then on the left hand side of the stamping line. The outline stitch is used to confine the featherstitch and the catstitch. The satin stitch with grooves evenly spaced is very attractive in initials. Its method is illustrated in the letter M.

Care must be taken that the grooves are perfectly straight. This can be done without much trouble if the line of the material is followed.

SINGLE HEMSTITCH.

When making the single hemstitch from two to four threads should be drawn out above the edge of the turning and the hem tucked down to two threads above the isolated threads. The thread is fastened on the left and the needle slipped in from right to left under four or five isolated threads. It is now drawn out and put upwards from below under one or two threads of the folded edge as illustrated in Plate XXVI, figure 1.

This stitch is frequently used for preventing the fringes of tablecloths and napkins from unravelling.

SECOND HEMSTITCH.

The second hemstitch (see Plate XXVI, fig. 2) is made in the same manner as the preceding one and worked from left to right. The only difference is that after the needle is passed under three vertical threads it is then stuck into the hem downwards from above over two threads so that it comes out exactly at the sharp edge of the fold. These stitches which can also be made on the right side of a piece of work appear like a little cord at the bottom of the hem.

LADDER HEMSTITCH.

After the hem is finished as illustrated in Plate XXVI, figure 1, a few more threads are drawn out from the material. The work is then turned around and the second row of stitches similar to the first one is made. The threads are grouped together in the same manner forming perpendicular bars like the rungs of a ladder and as illustrated in Plate XXVI, figure 3.

SERPENTINE HEMSTITCH.

The work (see Plate XXVI, fig. 4) is begun as illustrated in Plate XXVI, figure 1, an equal number of threads always being taken up. In the second row of stitches half the threads of one cluster and half of the next are picked up together so as to divide the bars, thus making the cluster threads first slant in one way and then in another forming a serpentine line.

ANTIQUÉ HEMSTITCH.

In the handsome old linen embroideries, dating from the days of the Renaissance one often sees two ways of making a hem,

rarely to be found described in modern manuals of needlework. Plate XXVI, figures 5 and 6, illustrate these two openwork hems on a magnified scale.

When the work is begun, a thread should be drawn out sufficiently far from the edge so as to allow room for an ordinary hem (in transparent or very fine materials no threads should be drawn out). The edge is then rolled; it must not be folded. The thread is fastened in at the left and the stitches made from right to left as follows: Take vertical threads of the rolled hem, then draw out and pass under the hem bringing it out again in the middle of the threads which are to form the next cluster. The result is that when a cluster consists of four threads the needle is brought out in the middle of the four and one thread below the top edge of the rolled hem. Plate XXVI shows this hem on the right side.

Education that pays its way.—"Industrial work in the schools of Gary, Ind., made money instead of costing money during the past year," says Dr. P. P. Claxton, United States Commissioner of Education. "When the school authorities in Gary came to sum up the results of the work in the trade courses, they found that the three departments of printing, cabinetwork, and painting had to their credit a profit of \$875.48. This is real value, too; the pupils made articles that were needed in the school; if they had not made them in the school shops the authorities would have had to purchase them in the open market at a total price of seven or eight thousand dollars."

The Commissioner then gives the figures for each of the trade classes in the Gary schools, as reported by G. E. Wulfing, in charge of the industrial instruction. In the printing department the value of the work produced was \$1,972.92. The salary expense was \$1,483.49 and supplies cost \$314.00 leaving a net balance in favor of the shop of \$175.43. There were 35 in the printing class, so instead of figuring the per capita cost of the industrial training of these pupils, it was possible to figure a definite contribution by each pupil to the wealth of the community.

o o o

Instruction in elementary mining is recommended by the British Board of Education for schools in mining districts. It is suggested that such instruction can be most effectively given, not in separate and detached lessons, but in connection with the regular school subjects.

THE NAUTICAL DEPARTMENT OF THE PHILIPPINE SCHOOL OF ARTS AND TRADES.

W. W. MARQUARDT, Superintendent, Philippine School of Arts and Trades.

THE nautical department of the Philippine School of Arts and Trades will be established at the beginning of the coming school year. The courses in navigation will be taught by experienced officers from the Bureaus of Navigation and Customs. Closely allied academic subjects will be taught by members of the faculty of the Philippine School of Arts and Trades. The beginning class will be limited to 40 students. Entrance requirements in brief, are as follows: The completion of the intermediate course, good character, sound body, and an agreement signed by the parent that the applicant for admission will complete the course and will take up seamanship as a vocation. All applicants must be between 16 and 21 years of age.

For the first two years of the course, the classes will be held in the Philippine School of Arts and Trades. During the last eighteen months the schooling will consist of practical training on board interisland vessels. An agreement has been entered into between the Government and the Shipowners' Association as follows:

The Government agrees to offer a course in navigation in the Philippine School of Arts and Trades which will be sufficiently thorough to enable young men, after further practical experience, to qualify as ships' officers. The Government also agrees to use its best efforts to stimulate enthusiasm for this course and to select, at the beginning of each school year, of the candidates presenting themselves, not more than forty to take said course.

The Shipowners' Association agrees to furnish facilities including food and quarters upon interisland boats for practical training to students in this course at the rate of one student per vessel during the vacation period, if requested by the Government, and for at least eighteen months after the course has been completed. It also agrees that these boys will be given every opportunity to acquire practical knowledge regarding the maintenance and navigation of ships, and to this end agrees that students, upon reporting to the ship, will be assigned to duty as apprentices. The time of said apprentices will be spent at such duties as the masters of the ships may direct. Before reporting on shipboard students who have completed the course will sign articles agreeing to serve as apprentices for the above period of eighteen months and during such period will receive in addition to food and quarters an allowance of fifteen pesos a month.

The Shipowners' Association also agrees to use its best efforts to find permanent employment at suitable remuneration for students who have completed the course of study in the school and their apprenticeship on steamers.

With the exception of the academic subjects, the texts of the International Correspondence School will be made the basis for all classroom instruction. These texts are described by the publishers in the following manner:

The mathematical subjects contain only such matter as will be useful to the student in his subsequent studies and in his career as a practical navigator. He is led, step by step, from simple operations in arithmetic to the solution of problems in spherical trigonometry.

The texts on elements of navigation, deviation and compass compensation, chart, lead, and log, piloting, and dead reckoning contain detailed explanations of all methods properly belonging to navigation by dead reckoning, beginning with definitions of latitude and longitude and gradually taking up the various methods and instruments used in fixing a ship's position at sea without the aid of astronomical observations.

The important subject of deviation and compass compensation is explained in an exhaustive treatment of 50 printed pages, illustrated with numerous cuts and colored diagrams. Special stress has been laid upon how to convert a compass course into true course, and conversely; and how to allow properly for all errors affecting the course run by a ship. All standard types of instruments used in the navigation of a ship are carefully explained, as is also chart work and the construction of Mercatorial charts.

In the text on "piloting" the student will find explained all principal methods employed in fixing the position of a ship when navigating in sight of land. In this text is included also a description of submarine signaling. The different methods of sailing are explained in the text on "dead reckoning." Numerous solutions are given, showing how latitude and longitude are found by each method. Under the heading of "day's work" are given several cases worked out in detail, showing plainly the actual work performed in fixing a ship's position by dead reckoning. The text on "nautical astronomy" gives full explanations of the principles underlying the methods on which a ship is navigated by the aid of celestial bodies. It explains the systems of coördinates of the celestial sphere and the apparent position and elements of objects used in celestial navigation. The sextant, its errors, adjustment, and use are fully explained

and profusely illustrated, as are also the different corrections that have to be applied to an altitude measured in an artificial or on the sea horizon. Careful attention has been given to the different kinds of time and the relation of one interval of time to another. The same may be said of the astronomical elements found in the Nautical Almanac and the determination of the meridian passage of celestial bodies.

In the text on "latitude" will be found all standard methods of determining latitude by observation of celestial bodies. Each method is illustrated by one or more examples worked out in minute detail. Longitude and Azimuth explains in detail how the longitude of a ship is fixed by observing the hour angle of a celestial body and how the deviation of the compass is determined at sea by azimuth observations. In Sumner's Method a detailed graphic description is given of the fixing of a ship's position at sea by astronomical crossbearings. Ocean meteorology deals with the most important subjects coming under that heading. It contains information relating to weather, the use of the barometer, and the law of storms. Descriptions and charts of the principal oceanic currents are given, including wind charts, showing the prevailing wind directions for certain times of the year. The subjects of tides and tidal currents are fully treated, and considerable space is devoted to suggestions relative to the handling of vessels in heavy weather. International Rules and Signals contains the revised rules for preventing collisions at sea, a thorough description of the international code system and other important signals, the United States Life-Saving Service, and suggestions for procedure in case of accidents at sea. Nautical Tables contains all tables necessary for ocean navigation. This course makes up a complete course of instruction for the practical navigator.

A bulletin containing the announcement of the opening of this department is being printed for distribution to each division. It outlines the nature of the work of marine officers, the opportunities offered for advancement in this vocation, and the course to be given. Blanks for physical and medical examinations, and for the agreement between the parent of the student and the Government of the Philippine Islands will be furnished upon application to any division superintendent.

WOOD FINISHING.

F. W. CHENEY, Instructor, Philippine School of Arts and Trades.

THE following notes on wood finishing have been taken from "The Modern Wood Finisher," by F. Lemaire, from information furnished by Mr. Bartolome Pascual, of the Philippine School of Arts and Trades, and from personal observations of the writer. Since any attempt at originality along this line would be of little value, three of the accepted ways of wood finishing have been taken from the above sources and explained as briefly as possible. From the numerous ways employed by wood finishers for the application of a wax, shellac, or varnish finish, one of each has been selected and explained in detail, the exact words of the authority from which they were taken being used whenever possible.

There are a few rules governing the finishing of all hard woods that should be well understood before the details of any particular method are taken up. They are here given.

All kinds of wood are made of fine, thread-like fibers bound together in large numbers. In some woods they are very fine and the wood is said to be fine grained. In others they are very coarse and the wood is said to be coarse grained. There are any number of medium grades between the two. In some woods the fibers are straight and parallel, in others they are twisted and interwoven, the first being called straight grained and the latter, cross grained. Cross grained wood has the better appearance when finished, and is therefore often used in furniture making.

The spaces between the fibers are called wood-cells, or pores. These pores vary in size, according to the structure of the wood, and they are really hollow passages through which the sap flows. When the wood has been dried so that no sap remains in these pores they will absorb any liquid that is applied to the surface. It is obvious that the sap must be well dried out before any finishing can be done successfully. It is also evident that these pores must be filled up before the surface can be polished. If any stain is to be used, it must be applied before filling. This is explained further under the subject of staining. If varnish or shellac is applied before the pores have been filled, part of it

will disappear into the surface so that the whole will appear rough. More varnish or shellac will not improve it nor make it level. One of the first principles of wood finishing is, "the less varnish or finishing material applied to a surface, the better." Numerous coats cover up the grain and give it a muddy appearance, and it should be the aim of every wood finisher to get the best polish with the least amount of material. When the varnish, shellac, or wax is applied, it should be upon a perfectly smooth, glass-like surface that will not absorb any of it. Filling is a very important part of the finishing process and if the workman understands the nature of wood he can easily see the reasons for the foregoing rules.

SANDPAPERING AND PREPARATION FOR FILLING.

Properly speaking, this work belongs to the shop, not to the finishing room. Woodwork is supposed to come to the finisher sandpapered and ready, and it may seem out of place to mention this operation in connection with wood finishing. In most of our trade schools and school shops, however, the teacher who is in charge of the shop is responsible for the finishing as well, and a few of the common requirements may well be mentioned.

Too much importance can not be placed on the proper preparation of work for finishing. There have been very many pieces of furniture exhibited at our annual exposition, that were "killed at the finish" by too hasty work. It may be taken as an axiom that "perfect polish can only be obtained on a perfect surface." Another half day, or even another hour of scraping and sandpapering, will often make the difference between a good and a bad finish. It is only a question of patience, and poor finishing is always set down as laziness on the part of the man in charge of the job. The general public judges by appearances and will seldom notice the good workmanship displayed in the construction of an article if it is poorly finished.

VARNISHING.

There has been a great deal of objection made to this style of finishing in the Philippines on the grounds that varnish will not dry in this climate. Most of these cases can be laid at the door of the cheap contractor who uses cheap materials. The best kinds of American varnish are just as satisfactory here as anywhere else. A little more time is needed for drying during some seasons of the year, that is all, and if the operator buys good, high grade varnish, he will get good results.

The system known as "French polishing" is now being taught in the school shops of the Islands. The time will come when

this will be discarded, as it is a long and tedious process. About the only arguments in favor of it are that the materials for it are cheap, consisting mostly of time and "elbow grease," and what little other material is needed can be purchased anywhere at small cost. Varnishing is the only system that the manufacturer can use profitably.

FILLING.

As this chapter is dealing with the use of real varnish, the user is advised to buy his filler at the same time that he buys varnish. Every manufacturer of varnish also makes filler, which is much superior to the home made kinds. If liquid filler is used, no directions need be given. It should be used according to directions. If a paste filler is used a little more work is necessary.¹ One of the best paste fillers on the local market is put up in the form of a paste which is thinned with turpentine until about the consistency of varnish. It is applied to the surface with a brush. Care has to be used in its application, as it dries very rapidly. The following directions for applying paste filler should be observed.

Thin as directed and apply with a flat brush. Before starting work, collect a quantity of soft, fine shavings and keep them close at hand ready for use.

The filler is applied to small surfaces, two or three square feet at a time. When the filler is first applied it has a wet, shiny appearance. As it sinks into the surface it turns dull and flat. As soon as this change occurs, rub the filler into the surface by means of a handful of dry, fine shavings. Then rub across the grain with a circular motion until no filler is left on the surface, all of it having either been rubbed in or taken up by the shavings. When one section is finished, apply filler to the rest and so on until the entire surface has been filled.

Allow twenty-four hours for drying, then go over the surface lightly with sandpaper number "00". The same process of applying and rubbing in should be used with either liquid or paste filler.

It is hardly necessary to state that filling can not be done successfully on a dirty surface. All sandpaper dust must be removed or it will mix with the filler and spoil it.

¹ A well-known manufacturer of finishing materials makes the statement that, "In our opinion the poorest grade of paste wood filler on the market is superior to the best liquid filler that can be made." This statement can be taken for what it is worth. In the writer's experience it has proved true.

SHELLACKING.

This part of the work is omitted in finishing cheap work on soft woods. It is recommended in work on hard woods because it gives a better surface for the varnish. Shellac dries very quickly and does not sink into the surface and dissolve the oil in the filler.

The first step is to see if the filler is perfectly dry. About the only safe way is to give plenty of time to dry and then a little more,—about twelve hours more than is directed by the manufacturers, to allow for the difference in climate between this country and the United States. A good formula for shellac is as follows:

Alcohol	1 liter.
White shellac	100 grams.
(Increase in proportion for larger quantities.)	

Dissolve the shellac in the alcohol and stir or shake often while using, as the shellac will settle very quickly. If the alcohol is slightly warmed the shellac will dissolve faster. This can be safely done by placing the can or bottle in warm water. See that the surface to be shellacked is clean and free from dust. Apply the shellac evenly with a soft, flat brush. Cover all projecting parts, such as panels, first. Spread the shellac across the grain, taking only a small amount on the brush at one time. Allow twenty-four hours for drying and go over the work lightly with fine sandpaper (No. 00). It is now ready for varnishing.

APPLYING VARNISH.

The real problem in using varnish, under the ordinary conditions that obtain in our school shops, is that no room is available that is "dust proof". The following plan is suggested as a makeshift: Select the best room available; a class room with tight windows and doors will do. It must be well cleaned up perhaps on a Friday afternoon. On Saturday morning have it swept with wet sawdust, which will pick up most of the dust on the floor. With a damp cloth wipe off all articles of furniture or parts of the woodwork that are likely to be disturbed or touched by the workman. Dusting with a brush will not do. It only stirs up the dust, which settles elsewhere. All windows should be closed before the last dusting and not opened or disturbed until the varnish is dry. Wipe off the surfaces to be varnished with a soft cloth slightly damp, not wet. Allow enough time for drying and then apply the varnish. The varnish will be dry enough by Monday morning so that the article

can be moved elsewhere for storage, but two or three days should be allowed to make sure. The second coat of varnish can be applied on the following Saturday in like manner.

A book could be written on the subject of varnishing and many have been written. There are all kinds of right and wrong ways of doing it and the workman can learn only by experience. A good painter can learn very easily, but it is a matter of time and careful training to make a good varnisher out of raw material. No amount of reading "book rules" will give him what he must get by actual practice. It is a good plan to practice on waste pieces until fairly good results are obtained before this work is attempted on valuable furniture.

RUBBING AND POLISHING.

After the varnishing, if the work is of a high class, it is finished by rubbing and polishing, the rubbing to reduce all the unequal surfaces, and the polishing to bring back the gloss to the varnish. The process may be described about as follows: Test the varnish and be sure that it is perfectly dry. This can be done by pressing it with the thumb nail. If no impression can be made, it is dry enough. A pad for rubbing is then used. This pad can be made by wrapping a small wad of cotton waste in a piece of soft cotton cloth. The professional finisher uses a felt pad, but this is difficult to obtain on short notice and the substitute described may be used. The common practice is to dip the pad into oil or water and then into powdered pumice stone. This can be repeated as often as moisture is necessary to pick up the pumice. The pumice is rubbed with the grain of the wood, but care must be taken not to wear off the corners. The rubbing should be continued until the surface presents a uniform appearance. The finest grade of pumice is the best to use, as it is not so likely to scratch the work.

Polishing is the next step and is omitted if a dull finish is desired. After rubbing, the surface should be cleaned thoroughly at once. It is usually done by sprinkling the work with damp, soft wood sawdust. The sawdust is dampened to keep from scratching and is wiped off with a soft cloth. Now take a mixture of coconut oil and alcohol in equal quantities to dampen a rubbing-pad, and then rub the surface of the wood with a rotary motion until it is polished.

Since varnishing is so little practiced, it may seem that too much time has been given to the subject. This is not the case. In fact, much more could be said if space permitted. Our present system of "French polishing" is slow and laborious and

can be practiced only where time is no object. It is not a system by which a boy can earn a living after he finishes school. Some quicker and easier way is sure to come and it must, of necessity, be varnishing.

FRENCH POLISHING.

This method of finishing consists of gradually filling up the pores of the wood with a solution of alcohol and shellac and bringing the surface to a high polish by means of rubbing.

As in varnishing, too much care cannot be given to a proper preparation of the surface that is to be polished. Every little defect must be removed, and every scratch taken off, or the effect will only be to make them more noticeable. About one-half of the entire process consists of the sandpapering. Several grades of sandpaper are used and when the surface is ready for polishing it is as smooth as glass. Sometimes a filler is used as in varnishing, but the usual way is to start from the raw surface, working in the filler and bringing the surface to a high polish by the same means.

The process approved and in use in most of our shops is as follows: After having smoothed the surface with sandpaper, give it a coat of coconut oil. Now use the finest sandpaper, which has already been worn smooth, and rub the surface until dry.

Make a ball of cotton waste and wrap it in a piece of soft cotton cloth, but be sure that there are no folds or wrinkles in its surface. Wet the ball with alcohol, from the inside, so that the alcohol may soak through. Sprinkle the surface of the wood with powdered pumice stone and rub with a rotary motion until the ball becomes dry. Repeat until the pores are filled. Prepare the shellac as already described under varnishing and put it in a bottle with a tight cork. A small hole may be cut in the cork so that a few drops of shellac can be shaken out at a time. Moisten the inside of the ball with shellac and continue the rubbing until the surface is polished. This will give what is called a natural polish to the wood, as none of the materials used has any color that will affect it.

The foregoing description gives about all that can be said in the way of directions. In simply reading over the rules, it would appear to be very easy to polish wood, but a practical trial will prove that it is quite the reverse. A great deal of patience is required and the proportion of material necessary has been well described as five per cent oil, alcohol, pumice, and shellac, and ninety-five per cent "elbow grease".

There are many objections to this kind of polishing, the principal one of which is the amount of time required. On the

other hand, it is cheap as far as materials are concerned and makes a fine polish. It can be used under circumstances where varnishing is not possible and will be, for many years, the only practicable system we can use in our schools.

WAX FINISHING.

This system is the easiest, and, at the same time, the most practical finish for some classes of work. It offers no difficulty in the repairing of spots that have been marred. One of the best things about wax finish is that it is easily repaired by anybody. Wax finish has many things to recommend it for use on soft wood furniture. It is cheap, easy to apply, and easy to keep in good condition. Even a wax finish, however, can be put on badly and a few ordinary precautions must always be observed.

Prepare the surface to be waxed just as carefully as if it were to be polished. Fill the wood with some good filler, taking the same precautions as in preparing for varnish. When the filler is dry, sandpaper lightly and apply the wax, rubbing until a good polish is obtained.

One of the chief objections to wax finishing is that it requires constant care to keep it in good condition. Nevertheless, the time required to re-polish it is very little. Waxed furniture can be re-polished by the houseboy as often as necessary, with the same wax that is used on the floors. Another objection is that it is always sticky. This is not true, if the right kind of wax is applied in the right way. The prepared wax sold by dealers here, if used in small quantities, will give a high polish that will not feel different from varnish. The sticky kinds of wax are those that are home-made and too thickly applied.

Wax is sometimes applied without first using a filler. This is only on very cheap work and is not recommended even for cheapness, as the outlay of a few cents more for filler will improve the work fifty per cent.

STAINING.

Cheap work is often stained to look like something better, and so a few suggestions along this line will not be out of place. In the local markets there are several kinds of stains which give satisfaction. The directions for their use are usually printed on the container, and it is not necessary to take up the details in the use of any particular stain. A few general rules that apply to all can be given.

Stain should always be applied before the filler. It is the next thing in the finishing work after sandpapering. Apply the

stain carefully, going over the surface thoroughly, but taking care not to double anywhere, as this will produce streaks in the stain. Most of the common stains or wood dyes are mixed with water, benzine, or alcohol, which "raise" the grain. It is necessary to allow plenty of time for drying; then the surface can be gone over with fine sandpaper before the next step.

Most of our stained work is made of lauan or tanguile. This wood, if properly stained, will give a fair imitation of oak or mahogany. The usual object of staining is to make the article match something else in color, or to make the imitation product look like the real one; therefore a stain should always be selected with care and tested on a sample piece of wood before using. If it is not the right shade it can be thinned to make it lighter or mixed with a darker stain to increase its color. It is not safe to expect that any stain will give quite as deep and rich a color as is shown in the catalogue sent out by the manufacturer.

GENERAL SUGGESTIONS.

In conclusion it is suggested that the filler, varnish, stain, or wax, be purchased already prepared whenever possible. The manufacturers of finishing materials have spent years in perfecting their products and it is folly for an amateur workman to attempt to make his own materials of this kind. Even though he secures the best in the market and does as well as he can, he will not attain perfection. What chance has he when he is using doubtful materials?

Another good piece of advice is: "Do not buy cheap material." The saving of a peso in the finish may mean the loss of ten in the sale.

Above all things, do not waste time in trying to polish inferior work. A good polish will make a piece of furniture attractive, but it can not cover bad workmanship.

It is as impossible for a human being to be happy who is habitually idle as it is for a fine chronometer to be normal when not running. The highest happiness is the feeling of well-being which comes to one who is actively employed doing what he was made to do, carrying out the great life-purpose patterned in his individual bent. The practical fulfilling of the life-purpose is to man what the actual running and keeping time are to the watch. Without action both are meaningless.—
ORISON SWETT MARDEN.

VOCATIONAL GUIDANCE.

OPPORTUNITIES OPEN TO FOREST RANGERS.

By Maj. GEORGE P. AHERN, Director of Forestry.

THE ranger force of the Bureau of Forestry is recruited in two ways: First, by the appointment of applicants who have become eligible as a result of a civil-service examination for the position of ranger; second, by the appointment, without examination, of students who have completed the ranger's course in the Forest School maintained by the Bureau of Forestry at Los Baños in connection with the College of Agriculture.

The civil-service-ranger examination consists of the second grade examination in spelling, arithmetic through fractions and decimals, letter writing, copy from plain copy, and penmanship. In addition to this, a special set of questions in practical forestry is given covering the rudimentary knowledge which each ranger must possess in order to carry on his future work. Actual experience in forest practice is also included. These special questions are rated at 45 per cent of the total examination, and an applicant without actual experience as an employee of the Bureau of Forestry stands but little chance of success in passing the examination. For this reason, such appointments are almost exclusively limited to applicants who have occupied a subordinate position in the Bureau, such as that of temporary ranger.

Now that the Forest School is beginning to turn out a class which will average about thirty graduates per year, it is probable that all future vacancies will be filled by these graduates, with the exception of a very few resulting from the promotion of temporary rangers already in the service, and therefore all who aspire to the position of ranger in the Bureau of Forestry should by all means arrange to take the course in the Forest School.

Entrance to the Forest School is restricted to applicants appointed by the Director of Forestry, but each such applicant must have been certified by the Director of Education as eligible for such appointment; that is, he must have successfully completed at least two years' work in high school or its equivalent.

Two such appointments are open to each province under the jurisdiction of the Assembly, and also to the special Provinces

of Batanes, Mindoro, and Palawan. A student receiving such an appointment is reimbursed for his travel from his home to Los Baños, and is given lodging and a monthly cash allowance of ₱25 during his course at the school. He is also furnished most of the school supplies he needs in his studies. On the completion of his course his expenses are paid on his return trip to his home, but he is under contract with the Government to enter the employ of the Bureau of Forestry not later than July 1 following the date of his graduation and to serve for a period at least equal to that during which he shall have enjoyed the the privileges of the scholarship. A limited number of private students can also be furnished with free quarters at the Forest School, although, of course, they receive no monthly allowance. Private students who have not had the equivalent of the first two years' work in high school may take a four years' course in forestry, the work of the first two years being identical with the course in agriculture.

Three courses of study at the Forest School have been authorized: a two years' course (the ranger's course in forestry), and four and five years' courses leading to the degree of bachelor of science in Forestry. The ranger's course, when successfully completed, entitles the student to a certificate. Candidates for the degree of bachelor of forestry must have completed the high school course or its equivalent. The time necessary to complete the course is four years of continuous work at the Forest School, or else two years in the ranger's course, followed by two years of special work in the Bureau of Forestry and a final year in residence at the School.

It is thus apparent that the pensionados at the Forest School not only receive a thorough education without cost to themselves or their families but, after graduation, they are assured of a position in the Government service without the necessity of any civil-service examination. Applicants for pensionadoships should write to the division superintendent who has jurisdiction over the high school in which they received their training, requesting him to recommend them to the Director of Education as eligible for the desired position. Notification of such action should be sent at the same time to the Director of Forestry, Manila. If they are eligible, they will be so certified by the Director of Education to the Director of Forestry, and the applicants with the highest training or the best grade from each province will be appointed.

It is essential that a forest ranger should be in excellent physical condition if he is successfully to carry on the field work which will occupy the greater portion of his time. In addition to a strong healthy body, he must keenly develop his powers of observation, have a retentive memory and an inclination for travel and outdoor life. It is especially important that he should be a man of strong moral caliber, as he will often have to represent the Bureau of Forestry at a distance from the supervision of his superiors and will be subject to temptations which a weaker man would find difficult to resist.

To such a man as this the position of forest ranger offers exceptional opportunities for interesting and healthful work, for travel, for education and for taking a telling part in the advancement of his country's welfare.

Upon entering the Bureau of Forestry a graduate of the Forest School is usually assigned to one of the forest districts under the supervision of a district forester or a head ranger. His duties consist principally in inspecting the operation of licenses, the examination of lands applied for as homesteads, measuring and estimating timber, patrol work, map making, collection of botanical specimens, etc. His work naturally brings him into a position of considerable authority over the forest users and it is sufficiently varied to prevent any possibility of monotony to a man who is interested in his profession.

If a graduate of the school shows himself of special ability and fondness for research work, an opportunity is ordinarily given him to assist in scientific studies carried on by the foresters of the Bureau.

On his entrance into the Bureau of Forestry a graduate ranger receives a salary of ₱50, ₱55, or ₱60 per month, depending upon whether he had completed two, three, or four years in high school before entering the Forest School. He also receives a per diem allowance sufficient to cover his living expenses when away from his station on official business. His traveling expenses in the field are, of course, also reimbursed by the Bureau. At the end of six months, if he has performed satisfactory service, he is granted a promotion equivalent to ₱10 per month. Thereafter, the opportunities for advancement and responsibility and salary depend entirely upon the man himself,—upon his ability, his integrity, and the amount and character of the work which he performs. It is the policy of the Bureau to advance its men in authority and salary just as rapidly as conditions permit.

Some head rangers in the Bureau are now receiving ₱1,428 per year, with a per diem allowance of ₱2. There is no reason why a graduate of the Forest School, if possessed of the necessary qualifications, should not considerably exceed this salary.

For further information concerning the work at the Forest School see the annual report of the Director of Forestry for 1912 (copies of which may be had upon application to the Director of Forestry, Manila) or the latest catalogue of the University of the Philippines.

(NOTE.—Former articles on Vocational Guidance appeared in the October and November issues of THE PHILIPPINE CRAFTSMAN. Since educators throughout the world have now recognized the value of assisting the school boy in selecting his life-career, it is important to keep in touch with the work done in vocational guidance. For this purpose, THE PHILIPPINE CRAFTSMAN has arranged for other articles to follow from month to month on this subject. Some of the topics to be discussed are: Nursing, teaching, the opportunities open to clerks, chauffeurs, etc.)

EDUCATION IN ARKANSAS.

That industrial training, often supposed to be a recent innovation in American education, was introduced into Indian schools in Arkansas eighty or ninety years ago, is shown by Stephen B. Weeks in a bulletin, "History of Public School Education in Arkansas," just issued by the United States Bureau of Education. The boys in these early schools were taught the elements of agriculture, the girls needlework and domestic science, and all were instructed in habits of industry, neatness, and order. At least one school was almost self-supporting. As early as 1840, Governor Yell sent a message to the Assembly containing recommendations for agricultural and mechanical training that mark him as a pioneer in this significant phase of modern education.

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My conclusion is that industrial education is essential to the social and political well-being of a democracy. A knowledge of how men get a living, the nature of their work, and the value of it, is a prerequisite to intelligent appreciation of the dignity of labor.—*Selected.*

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Nothing made by man's hand can be indifferent; it must be either beautiful and elevating or ugly and degrading.—WILLIAM MORRIS.

Separate schools are necessary for the proper solution of the vocational school problem in the United States, according to Edwin G. Cooley, of Chicago, special investigator of vocational education. These schools, says Mr. Cooley, must not be regarded as substitutes for the present schools, which are doing satisfactorily a necessary work, but as supplementary to them.

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At the Ghent World's Exposition in 1913 there will be a number of international congresses, including one of teachers of domestic science and one of women engaged in farming, the latter in connection with a general congress of agriculturalists.

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Berlin is to have compulsory industrial and commercial continuation schools for girls.

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The University of Tennessee has just instituted extension courses in geology especially designed for men engaged in the mining and quarry industries. The courses consist of a short session (six weeks) and correspondence work. The subjects of instruction will be: Physics, chemistry, mathematics, geology, mining and metallurgy, and mechanical engineering. The courses are described as especially adapted to meet the need of the man "on the firing line."

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A two years' course in forestry has been instituted at the University of Wisconsin to meet the demand for trained forest rangers.

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At a conference of Swedish teachers recently it was emphasized that instruction in domestic science in the schools must deal principally with the substantial things, instead of the "caramel and tart" kind.

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In urging the need of vocational training, the Indiana commission on industrial and agricultural education estimates that there are fully 25,000 boys and girls in that state between the ages of 14 and 16 who have not secured adequate preparation for life work in the schools and who are now working at jobs which hold no promise of future competence or advancement.

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Man is relieved and gay when he has put his heart into his work and done his best.—EMERSON.

EDITORIAL AND OFFICIAL.

THE essential factors in making good furniture may be classified under four headings—good design, good material, good workmanship, and good finish. Slight any one of them and the result is a partial failure.

Almost every man imagines that he can design good furniture. In fact, one trade school man is credited with the remark that he had yet to see the article of furniture that he could not “improve,” but subsequent observations made it clear that what he meant to say was “alter.” The man who tampers with furniture design is treading upon dangerous ground. He is experimenting along lines where other men have spent years of careful study, and is putting his immature judgment ahead of theirs. In all trades and professions there is a distinct line drawn between amateur and professional work. Unfortunately for the trades, there is no law protecting the professional workman from the encroachments of the amateur, save the unmistakable brand upon the product of his labor.

One of the commonest criticisms of school-made furniture is “that it can be recognized anywhere as the production of a school shop.” This is only natural. It takes only one or two terms of exercise work in a training school to make an industrial teacher, while most of the trades require an apprenticeship of two or more years’ actual practice, eight hours a day and six days a week.

The ordinary man of this world dresses like other men, lives like other men, and amuses himself like other men. He leaves the designing of his clothes to the tailor, and usually picks the most popular tailor. He leaves house designing to the architect and accepts the result without question. Along almost every line he is governed by public opinion, yet, if this man is blessed with a little brief authority and a lumber pile he will immediately begin to design something. Not only that, but he is often known to point with pride to the freak that he has produced and advertise the fact that he designed it. Imagine any man, save a tailor, coming out on the street in clothes of his own design. Robinson Crusoe did it, but he was marooned on a desert isle and had to make the best of it. He was not in touch with the best designers of the world as are all of our amateur workmen to-day.

Admitting that such a thing as designing new styles of furniture is possible, there are certain important details that cannot be changed, even by a real artist. One of these is standard heights. There is a certain height at which the seat of an easy chair should be made. Vary that height a small amount and the result is an uncomfortable chair. There is a standard height for a dining table. Vary it and the change is noticed by every person who dines at that table. These things that are not meddled with by professional designers are the commonest faults of amateur designers.

The recent exhibition of school-made furniture at the Carnival of 1913 was criticised by many people for some of its "freak" designs. To be sure, many of the critics, most of them in fact, knew very little about furniture design. They merely looked at an article and saw that something was wrong. In spite of this fact several of the defective articles were sold. The average layman believes the dealer who tells him that his goods are all right and feels a certain amount of respect for his opinions.

Some twenty assorted tables and chairs, most of which were sold, were measured and only one article, a dining chair, was found to be of standard American height. The question naturally arises: Why don't the people who make furniture every year to sell at the Carnival follow the common rules of the trade? They depend almost entirely upon an American market, yet it seems that they get the most important details from Spanish or Chinese models. It may be the custom in Spain or China to make high tables and chairs, but it is not in America. The purchaser of a dining table hired workmen after the Carnival to cut two inches off the legs and bring it down to a comfortable height.

On the subject of material very little need be said. The furniture makers of the Philippines are fortunate in having some of the finest woods in the world with which to work. Beauty of color and grain covers many deficiencies in design and workmanship, and little decoration is necessary. On the other hand, the material selected is often too good for the design and vice versa. The handsomest piece of wood shown in the whole exhibit was made up as the top of what appeared to be a kitchen table. In other words, a cheap design was used with high-class material with the result that the piece was not sold. In regard to good workmanship, there was very little fault to be discovered. Joints were well made and the tool work in general was good.

As to finishing, the exhibit this year showed a marked general improvement over that of previous years. The most noticeable defect was premature finishing; that is, attempting to polish surfaces that had not been sufficiently prepared. One Filipino critic remarked that "the boys in — Province knew how to polish, but they did not know how to plane." It is customary to blame such work on the boys, but what about the teacher who approved this article and sent it on to be shown to a hundred thousand people as a product of his school?

One piece which occupied a very prominent place in the exhibit showed unmistakable traces of the machine planer under the finish, and another showed hammer marks which had not been removed before finishing. Stain, which must have been about the consistency of thick paint, had been used on another article and it would have required an expert to tell what kind of wood had been used.

To return to the subject of design: There is one kind of furniture that figures in all of the four divisions mentioned at the beginning of this article, namely, "knock-down" furniture. At least 75 per cent of the beauty in a design has to be sacrificed to accomplish this feature, hence fine material is not necessary, durability being most important. Finishing also takes second place. The making of knock-down furniture is not worth teaching to Filipinos as it has a very limited market. About the first thing a man does after purchasing knock-down furniture is to put in a few screws so that it will not "knock down" while in use.

The term "mission" furniture is also much abused. The original mission furniture was made by the padres in the remote missions of the old Southwest. They had inadequate tools and so made their furniture heavy, without curves, and pegged it together for lack of nails. They polished their chairs by sitting on them for a couple of generations and polished their tables by eating countless meals thereon. The average layman to-day thinks that a dull finish means mission style and his belief is often strengthened by ignorant "designers" or salesmen.

In conclusion, it may be positively stated that the only safe course for an amateur furniture maker to pursue, is to provide himself with a good stock of catalogues and copy from them. If the furniture is made for an American market, copy American styles; if for a Spanish market, copy Spanish styles; but above all things, do not get the two styles mixed, as the result will sell neither to an American nor to a Spaniard.—F. W. C.

One of the most encouraging pamphlets which has come into our hands for some time is "A Study of Certain Social, Educational and Industrial Problems in Porto Rico," prepared at the request of the Hon. Henry L. Stimson, Secretary of War, and the Hon. George R. Colton, Governor of Porto Rico, by Mr. Meyer Bloomfield, Director of the Vocation Bureau of Boston. This pamphlet of 26 pages was based upon a visit of nineteen days during which time Mr. Bloomfield carefully inspected many of the public schools, factories, and sugar centrals, attended several labor conferences, and talked personally with several hundred people representing all classes and conditions of the population.

**Industrial
Problems in
Porto Rico.**

The following extracts are taken from his report:

The day and night schools of the island, excellent though they are from the academic standpoint, might as well be in Massachusetts or New York. There does not seem to be that creative localization of the school which Porto Rican necessities, the standard of living of the masses, and the probable future of the majority of the children call for. The island schools are unquestionably helping to make good citizens. It is a grave question whether the present arrangements contribute materially to the making of homemakers, producers, skilled workers, self-reliant and efficient bread-winners.

"They are preparing their brightest and most fortunate children, in so far as any life work is attempted, for professional and commercial careers, and not for self-support in agricultural and mechanical pursuits. Porto Rico lacks, to be sure, a diversity of occupations.

Many homes of the well-to-do are furnished with highly varnished, crudely glued, cheap furniture of a kind we associate with the installment furniture dealers of Boston, Chicago, and New York. It cannot be that furniture, appropriately designed in native woods, will not find a market in the island homes.

Too much time is spent indoors, at the desks and benches, in the Porto Rican schools. The children of the rural districts in almost all the grades might well forego some of the book learning and classroom instruction and learn road building, planting, yard ornamentation, and simple industrial work of both educational and marketable value.

The instruction has been good along academic and cultural lines, with some school buildings and a number of teachers that compare with the best in the States. But there is little practical preparation for agricultural, homemaking, and industrial pursuits.

Domestic science in the island schools represents at the present time a pious wish rather than an accomplishment. Except for some class work done by a few high-school girls, and well done, if one can be satisfied with the use of canned things and non-native products, the girls of Porto Rico are not being largely prepared for their most immediate and most important function.

In this connection the statement may be made that home gardening for food is the most practical and necessary form of nature study. The children learn about sugar, tobacco, and fruits, and are thus given an insight into the prime products of the island. But these lessons and those on native

fibers, woods, plants, etc., are almost futile, because they are not connected with actual productive experience on the part of the children.

Vocational instruction does not in itself carry any assurance that it will not deteriorate into academic routine. Wherever introduced in the island, whether as elementary manual training for cultural purposes, domestic training for home or livelihood purpose, or training in trades and agriculture for any purpose, there should be rigid insistence on at least elementary business methods. The time must come when industrial schools will be asked to approach self-support, partial, if not complete. This is not because such schools must be treated as profit makers. Let me emphasize this point. Vocational instruction is meant to teach skill and not speed; it is interested in the producer more than in the product, and this differentiates it from factory work. But there is urgent need of applying the simple and concrete tests of ordinary business enterprise. These fairly indicate the efficiency of the teaching and the teachers. They give reality to what may otherwise seem sham or play. Business methods therefore must be applied to every form of vocational instruction, and the children taught how to keep track of the economic aspects of their work. A comparison of such records from the vocational shops, classes, grounds, and fields of the various schools will show in time where real work is done.

Effective agricultural teaching is not so much a matter of school building and school routine as it is a system of personal coöperation with the children and the adult pupils, too, in their own home grounds. The usual academic devices of instruction are subordinate in this work, except in so far as classroom instruction is directly related to the work outside.

To insure success of these projects, the educational authorities must definitely formulate agricultural and other kinds of vocational training as forms of truly liberal education, ranking in cultural and Americanizing value with history, mathematics, or foreign languages. Nothing will so speedily injure these efforts toward a more fundamental education as a suspicion that one kind of education is being devised for the poor and another for the rich. Every school, therefore, must, in order to justify its title to an educational institution, provide in a greater or less degree the elements of localized training. Teachers out of sympathy with this conception of education do not belong to a democratically supported system of public schools.

With a great degree of satisfaction we feel that such criticism would not be made upon our educational system were Mr. Bloomfield to visit us. We have localized our schools as much as possible to meet the necessities of the Philippines. We are centering our activities upon the training of the children for self-support in agricultural and mechanical pursuits. Our trade schools furnish many homes with solid furniture made of native wood. More time is spent in industrial work and less time in book learning and classroom instruction than in any other educational system with which we are familiar. We are laying more and more stress upon practical preparation for agricultural and homemaking and industrial pursuits. Our domestic science is not satisfied with the use of "expensive canned things," but aims at the general use of native products. More attention is given

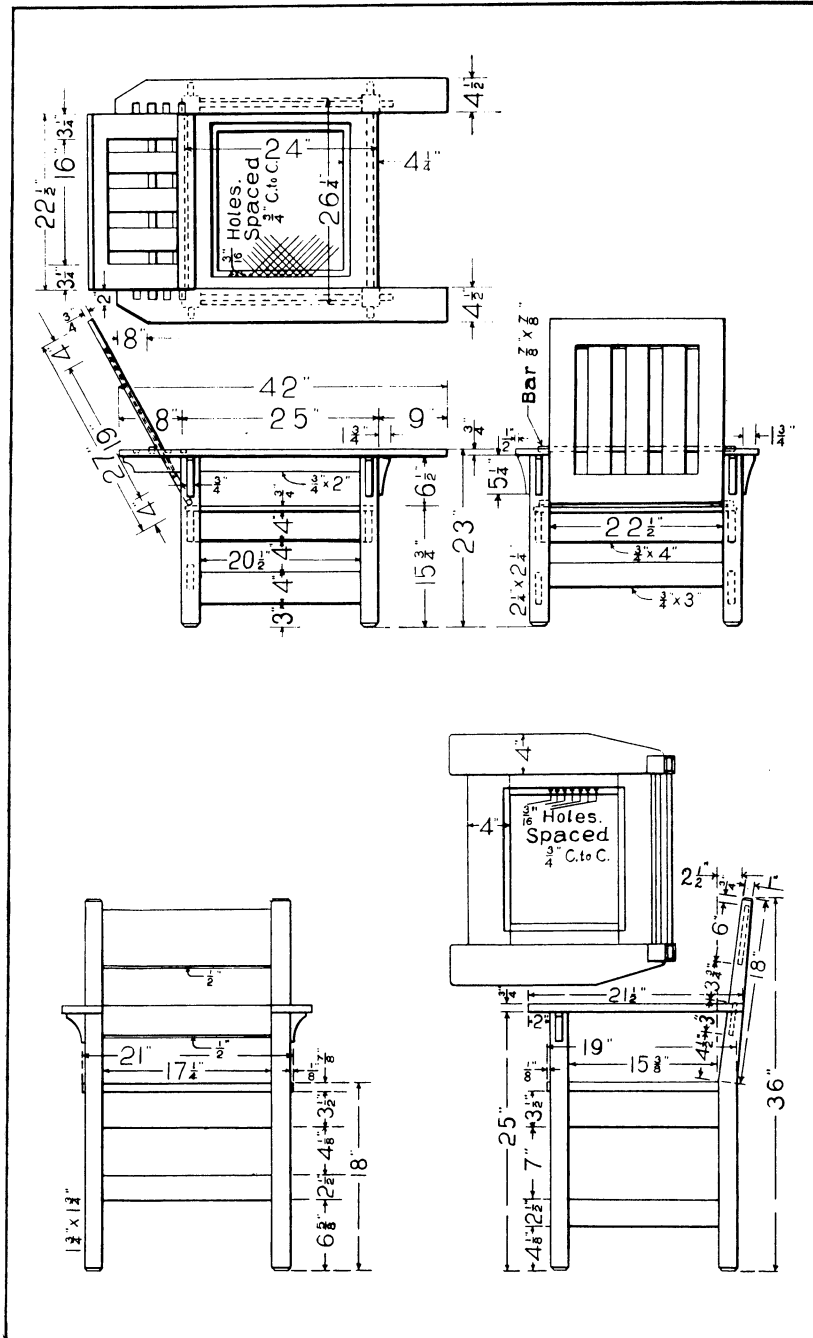
to home gardening than to nature study and every effort is made to connect all lessons with actual productive experience. Our trade schools are already approaching partial self-support and are enabling many of the pupils to "keep track of the economic experience of their work." All of the primary and intermediate pupils must take some form of industrial work and thus learn that the same kind of education is being devised for the poor as for the rich. Mr. Bloomfield criticizes the system of boarding out in hotels and even in private homes by the American teachers. He believes that the teachers should establish home centers from which should radiate the best influence such as comes from model homes adapted to the neighborhood. Fortunately in this respect, very few of our towns provide boarding facilities and thus by stress of circumstances most of the American teachers have their own homes.

Another of his criticisms was to the effect that many of the classrooms lack appropriate decorations. Mr. Bloomfield maintains that the school walls should show what might be inexpensively done with barren homes. He also maintains that health suggestions effectively presented would serve a better purpose than the usual class of mottoes found adorning school halls. This criticism would doubtless be valid in respect to many of our schools, although the stimulus given by Governor-General Forbes in presenting a large number of valuable pictures to many of the schools has greatly improved classroom decorations. One of the criticisms of Mr. Bloomfield which might be well taken to heart in a number of schools is the following query: "If school toilets cannot be properly cared for, how can we expect home sanitary conditions to be right?"

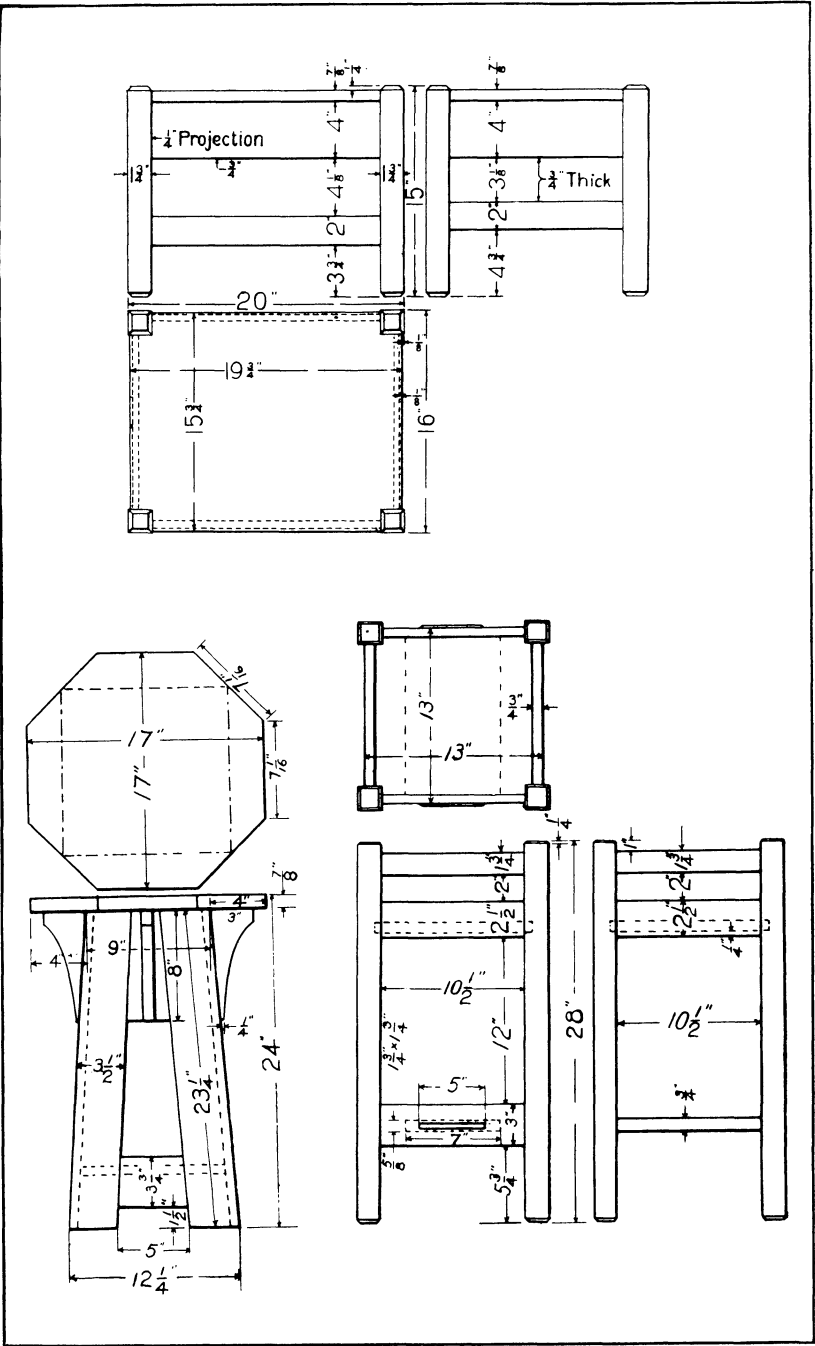
The separation of the university from the public school system and the establishment of the Labor Bureau, both of which were urged for Porto Rico, have already been accomplished in these Islands.

A reading of Mr. Bloomfield's report strengthens us in the conviction that our educational policy is along the right lines. It also suggests a number of improvements that would be applicable here. Its perusal is recommended to all interested in the educational policy of the Philippines.

In connection with this survey of Porto Rico, especial interest will be attached to the survey of Philippine schools being made by Dr. Paul Monroe of Columbia University, who will lecture at the Baguio Teachers' Vacation Assembly.—W. W. M.



Morris chair and armchair. (P. S. A. T.)



Stool, taboret, and flower stand. (P. S. A. T.)

INDUSTRIAL NOTES.

The declared exports from Beirut, Syria, for the first six months of the year 1912, show that during this period cotton lace to the value of \$442,610 was exported to the United States.

The making of cotton lace is entirely a cottage industry in Beirut and gives employment to many unattached women and girls, who otherwise would have no means of livelihood. This lace is made from patterns furnished from the United States and is of the class known as baby Irish crochet. Some of the finest lace made there comes from an American mission school where many girls are given employment.

The making of Irish crochet was taken up in the schools of the Philippine Islands several years ago, and has been extended to a great many of the provinces. Under the present tariff laws the products of the Philippine Islands enter the United States under very favorable conditions, and considering the high standard of work being done here, there is no good reason why the girls and women of the Philippine Islands cannot soon produce as much Irish crochet as is now being supplied from Beirut.—R. B. R.

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The November number of the Paris Journal of Fashion has several good ideas for designs in lace and embroidery. The design on figure 3 is suited for a similar garment of any size. Figure 8 on the following page would be more suitable for a small child if only the designs at neck and hem were used. Figure 6 on the same page is pretty, but rather too elaborate; a plainer

style of edge would look better; the lace might be omitted or the buttonhole edge could be more simple.

The handkerchief at the top of page 6 would have a better commercial value if done in white only, with a hemstitched edge. The design for a book cover at the bottom of the same page would have little commercial value if made in quantities, but would make a pleasant spot of color in an array of white work, and would make a pretty gift.

"Fancy Work Album" No. 11, pages 1 to 5, shows designs for colored work, most of which will be of little use in school work. The maple leaves and blossoms on figure 5 could be adapted to a design for a square lunch cloth in white linen.

Designs in cutwork on pages 6 to 8, inclusive, are not suitable for children in the primary grades because if a mistake in cutwork is made, it cannot be easily remedied. The toilet set on these pages is simple but would be prettier if the leaves were differently shaped and arranged.

The designs of imitation needle-made lace on pages 9 and 10 would be more delicate if the edges were not so heavy. The chief beauty in this style of lace is in the simplicity of design and also the fineness of material and work. On page 11 the two motifs are good and the stitches easy for small fingers. On page 14 the crochet square (the salamander) would be very interesting for pupils and might find a use for various purposes.

The Modern Priscilla for November, page 5, shows a good design for a sailor collar in Irish crochet. On page 7 the designs are of little

value. On page 8 the best designs are Nos. 12-12-16 and 12-12-23. Cross-stitch designs on page 9 could be adapted for various purposes.

Tatting is very easily made and can be done by small children; probably the prettiest designs are Nos. 12-12-36 and 12-12-39 on page 10. All the designs of page 20 including duchess or princess lace medallions with velvet ribbon drawn through them, are pretty and suitable for school pupils.

On page 21 Nos. 12-12-67 will be found a simple design suitable for underwear. The collar and cuff designs in macramé crochet are rather stiff. The basket-of-flowers designs on page 27 could be adapted for use in white for table linen. The designs on page 60, Nos. 205, 206, and 207, are good; also Nos. 215, 216, 217, 218, 219, 220, 221, and 222. On the following page the best designs are Nos. 12-1-26 and 12-1-25.

—E. M. M.

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To meet the ever-increasing demand for definite information as to the best methods of treating and coloring different industrial materials, inquiry concerning these matters was addressed to the Bureau of Prisons and the Bureau of Science. Since the information received may be of interest and value to the many schools where work with these materials is being carried on, suggestions obtained in this connection are given below:

"Black colors for rattan may be produced by soaking the material for a period of time in mangrove swamp mud. While no definite information can be given as to the cause in the change of color, it is presumably due to the presence of tannin in the mud, and it is thought that the same effect may be accomplished by the use of cutch solution." This solution is prepared by extracting the tannin from mangrove bark with

water and evaporating the liquor to a suitable percentage of moisture. It is also stated that bejuco may be dyed black by the use of "campeche." The material should first be boiled before it is put into the dye and a handful of "copperas" added to every 5 gallons of fluid. By the above method dyeing requires from two to four days. If the bejuco is old and yellow, or dirty, it sometimes takes six days. The material should be washed in clear water and hung up to dry. Heart bejuco may be dyed any color. Campeche and copperas make a very satisfactory black color. To secure green, blue, red, or yellow the following method may be employed: To every 5 gallons of the campeche solution add one-half kilo coarse salt and 1 pint vinegar before putting in the bejuco, then wash in clear water and hang up to dry. The material should be dried for at least twenty-four hours. To dye bamboo black, use campeche and copperas; brown, employ negro profundo, vinegar, and salt.

Respecting possible methods whereby bamboo can be rendered impervious to the attacks of boring insects, both directors state that there seems to be no satisfactory means to prevent this, though it is reported that the chances for such attacks may be diminished by cutting the bamboo in the dry season and that possibly the impregnation of the material with corrosive sublimate might be used to advantage.

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During the month of November, Mr. Luther Parker, industrial inspector of the General Office, Bureau of Education, spent some time in Panay and Negros examining native designs and old native basketry. Part of the time he was accompanied by Dr. Robertson of the Philippine Library and Dr. Miller of the Bureau of Science, who made a number of interesting ethnological discoveries.

ON BASKETMAKING.

In basketmaking the importance of following some orderly arrangement or plan of work in the form of models and patterns cannot be overemphasized. The following notes, prepared by Mr. Gil Raval, the division industrial supervisor of Ilocos Norte, may repeat in part some of the instructions contained in former issues of *THE CRAFTSMAN*, but much of the matter presented here has to do with the preparation of materials and it is thought better to run the risk of repetition rather than to err on the side of giving too little information on this important subject.

The instructor should have on hand a model for the pupils to copy. This model should show full details of making the basket, including all measurements, kind of spokes and weavers, and the successive steps to be pursued.

THE SPOKES.

1. It is imperative that the spokes be of uniform thickness and width. If they vary in any particular, the surface of the woven article will be uneven.

2. Both edges of the spoke should be made a little thinner than the middle of it. If this rule is followed rectangular or square spokes will be strictly eschewed, and only round or thin and elliptical spokes will be made use of. The round spoke may be used when the spokes are bent around or braided at the brim or at the border of the bottom of a basket. Elliptical spokes are employed for most baskets made in the schools of the Philippines.

3. The width and thickness of spokes may be regulated and made uniform by drawing them through a piece of metal in which holes of the desired size have been punched.

4. Many spokes should be dipped in water before they are bent. Rattan becomes black when wet.

5. In building up the sides of a basket, all spokes must be kept run-

ning straight from the center of the bottom and should be equally distant from each other; they must not be allowed to lean to one side. The weaver should stop from time to time and observe the general appearance of the work. If the bottom is twisted and uneven, or if the height of the sides is not everywhere the same, the errors must be corrected as soon as they are found out. It is impossible to remedy mistakes in workmanship when the basket is completed.

THE WEAVERS.

1. The weavers must be of uniform shape and size, especially when the weave is to be double or triple. Weavers of different shapes and sizes produce a rough and uneven surface.

2. The weavers may be round, oval, or flat. Wide and flat weavers produce a flat surface. If a curved surface is required a double or triple weave with round weavers may be made use of. For the bottom of a basket stiff weavers as wide as the spokes should never be employed, for they do not fall flat and smooth.

3. In double or triple weave, new weavers must not be inserted directly opposite one another, but must be placed three or four spokes apart. In inserting a new weaver, care must be taken that its end cover that of the old one. The ends of weavers sticking out must at once be trimmed off. A close and tight weave is imperative. Loose weaving makes the basket weak.

4. The bottom of an elliptical basket does not always rest flat on the ground if double or triple weave is used. This twisted bottom is easily made flat by reversing the direction of the weavers.

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TREE PLANTING IN ILOILO.

The following tabulation is from the summary of a report of the tree-planting activity in the division of Iloilo on October 3, 1912, which was observed as Arbor Day.

Summary of plantings.

Number of fruit trees planted at school	4,992
Number of fruit trees planted at home	4,000
Total number of fruit trees planted	8,992
Number of shade trees planted at school	1,852
Number of shade trees planted at home	724
Total number of shade trees planted	2,576
Total trees planted.....	11,568
Total shrubs planted.....	3,780
Grand total	15,348

—N. H. F.

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The division of Occidental Negros has issued a circular, No. 45, series 1912, with interesting and valuable directions for the use of the corn posters and the practical application of benefits derived from the corn campaign. The circular in part follows:

"Corn posters have been distributed for all school buildings and also all public buildings. These posters contain much valuable information and should be brought to the attention of all pupils and the general public. Teachers should make a special effort to get the people interested in the corn campaign and impart to them the information contained in the posters. Teachers should ever be willing to give farmers instruction regarding corn-growing and to be of such assistance to them as they can.

"All teachers are directed to give their classes lessons from the corn posters. This applies to all primary and intermediate classes. The experiments shown on the posters should be made in the classes. The instructions given regarding seed selection, preparation of the soil, methods of planting, cultivation of growing corn, and methods of harvesting and storing corn should be taught all pupils and should be ac-

tually applied in connection with the present corn contests."

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The division of Leyte has recently issued two very important circulars on the subject of sewing in Grades III and IV. These have been based mainly on Bulletin No. 35, and a plan of lessons has been worked out in a very definite and detailed form. For Grade III 28 lessons have been prepared to extend over one school year.

At the outset certain considerations with respect to sewing work in general are given and then follow the different lines of fine sewing of commercial importance. Under each of these, definite instructions as to materials, patterns, designs and working instructions and equipment are furnished.

Plain sewing occupies an important place in the outline, following suggestions contained in Bulletin No. 35, and "Home and School Sewing" by Frances Patton. Each lesson has been planned so as to make the individual pupil's progress thorough and systematic and adjusted to the work prescribed in the subject. Working directions for each lesson are given in considerable detail.

The outline for Grade IV is quite as full and thorough as that for Grade III. Plain sewing is given precedence over fine sewing and definite lessons outlined to extend throughout the school year. An important feature in connection with plain sewing is work in English composition based upon the different sewing exercises. This is in line with recent suggestions from the General Office whereby conversational and written English in connection with industrial work shall be given greater prominence than it has been heretofore.

Under fine sewing, work in embroidery, bobbin lace, and Irish crochet are carefully outlined and

explicit instructions are given on the making of the different patterns and designs.

These two outlines constitute a very valuable contribution on the subject of this important industrial branch and are quite certain to produce a marked improvement in both the character and quality of the needlework done in the schools of that division.—R. B. R.

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The success which was attained by the provincial school of Pampanga at the Bureau of Education exposition of 1911 through the display and sale of a choice collection of native preserves, jams and jellies of school manufacture, will be recalled by many of the readers of this paper. The popularization of this class of foods, their manufacture and sale by domestic science departments of intermediate schools have become a prominent feature of school work in a number of divisions. The provincial high school of Leyte has taken this matter up in a recently printed list and announcement quoting kinds, quantities and prices of such food products as this school offers for sale.

This effort to extend the use of these table delicacies will be beneficial in many respects and will undoubtedly result in their manufacture being undertaken on a wider scale in other intermediate schools of that province.—L. R. S.

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"Industrial Education in the Philippines" is the title of a publicity circular recently issued by the United States Bureau of Education. It gives an account of the system of industrial education in these Islands, describing briefly the various branches pursued. The paper is highly commendatory, recommending features of Philippine Industrial education to the attention of school leaders in the United States.

THE VALUE OF NORMAL INDUSTRIAL INSTITUTES.

That the value of the Normal Industrial Institute to the municipal teachers cannot be overestimated is evidenced by the interest taken in the industrial courses. This meeting of the teachers is the most practical and efficient means of promoting the industrial spirit. The constant change in the aims and methods of the work, lack of industrial training in the teaching body of municipal teachers, the inadequacy of industrial literature, and the failure to grasp properly the importance of the subject, fully warrant the gathering together of such assemblies. The institute is also a vital means of growth to the teacher. Widely divergent methods and problems peculiar to this country make the association of teachers from all parts of the division of inestimable value.

The work is made congenial and recreative and there is always the after-feeling of satisfaction for something accomplished. To the Bureau of Education it is a safe investment of time and money with practically sure returns in proportion to the interest and effort of the teachers afterwards. Moreover, from the ranks of these teachers can be picked the earnest men who are in full sympathy with their work for the benefit of the profession, the school, and the country.—J. H. L.

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The need for well-qualified industrial teachers to give instruction at the various division normal institutes, as well as at the Insular normal assembly and in connection with the industrial courses given at the Baguio vacation assembly, has been increasing each year. In many of the divisions there are experienced teachers who are able to teach the regular industrial work satisfacto-

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plants are transplanted, some soil should remain attached to the roots. Seedlings properly transplanted, watered and shaded should not wilt, and their subsequent growth should be rapid.—J. A. C.

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EXTRACTS FROM THE REPORT OF THE
COMMITTEE ON INDUSTRIAL INSTRUCTION.

The committee on industrial instruction submitted, among others, the following recommendations at the annual convention of division superintendents held at Manila last February.

That all industrial work in our schools be made self-supporting in so far as possible. This should be done not only in order to lessen the expense of carrying on the work, but also for the business aspect of the matter. A pupil who is not taught that his industrial work will bring in some financial return, either to himself or to the school, is losing the greater part of the lesson to be taught.

That the prescribed industrial program be carried out, even though it require the closing of schools in which adequate equipment, etc., cannot be provided.

That divisions have industrial supervisors, even though supervising districts have to be enlarged. The work of the division industrial supervisor should be outlined in detail by the division superintendent in order

that there may be no chance for differences in instructions to supervising teachers. The Filipinization of industrial instruction should be pushed forward as rapidly as possible. Filipino industrial supervisors should be used wherever suitable ones can be found.

That the courses in all high schools, except those in a few centers, be limited to two years, and that in those two years there be introduced vocational work along the lines already established in the intermediate schools.

That the corn campaign be carried on for another year, and that a scheme be worked out whereby the ground may be used throughout the year, thus showing the pupil the value of rotary crops.

That the sending out of standard designs from the General Office be continued. That continued effort be made to find some characteristic Philippine design which may be used in all commercial work so as to give it a distinctive Philippine stamp.

That a farm school for each province be included in our educational plan, but that such schools be started on a small basis in order that their development may be gradual and secure.

That, in selecting students for the School of Household Industries, preference be given to persons trained in the public schools who can speak the English language and who are, in some degree, already acquainted with our methods of work.

BUREAU OF EDUCATION PUBLICATIONS—Continued.

THE TEACHERS' ASSEMBLY HERALD: TEXTBOOKS—Continued.

Volumes I, II, III and IV. (Supply exhausted.)

Volume V, 1912. (Supply limited.)

Volume VI, 1913. (Now current.)

TEXTBOOKS:

Selected Short Poems by Representative American Authors.

Commercial Geography: the Materials of Commerce for the Philippines.

Macaulay's Samuel Johnson; Emerson's Self-Reliance; Lincoln's Gettysburg Address.

An Introduction to the Study of Colonial History.

Economic Conditions in the Philippines. (In course of preparation.)

Supplementary Problems for Trade Schools and Trade Classes. (In course of preparation.)

THE PHILIPPINE CRAFTSMAN:

Volume I. (Now current.)

CRAFTSMAN REPRINTS:

1. Philippine Mats. (In course of preparation.)

MISCELLANEOUS:

Woodworking, a Manual of Elementary Carpentry for Philippine Public Schools.

A Statement of Organization, Aims, and Conditions of Service in the Bureau of Education.

A Talk on Health Conditions in the Philippines.

